



## KAS Conference Mega Cities III Nov 03 **The Amazing(?) Bangkok Story**



**‘Mega Cities III’: Action models and strategic solutions**

International Conference organized by Konrad Adenauer Stiftung

Schloss Eichholz, 24 – 26 November 2003

# **Mega-City Development and Transport: The Amazing(?) Bangkok Story... Trends, Facts and Figures of 30 Years**

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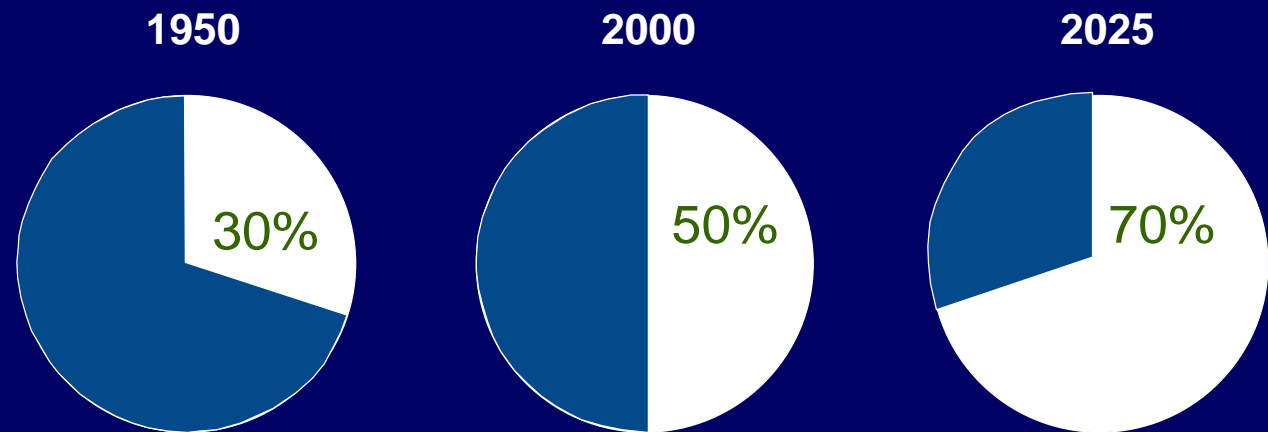
# Mega Cities III: Global Urban Development Prospects

1. Background: The Bangkok Transportation Study
  2. 30 Years of Urban Development in Outline
  3. Public Transport
  4. Urban Expressways
  5. Institutions and Policies
  6. Some Conclusions
- 



# Cities in a “Globalizing” World

## GROWING PROTAGONISM OF CITIES

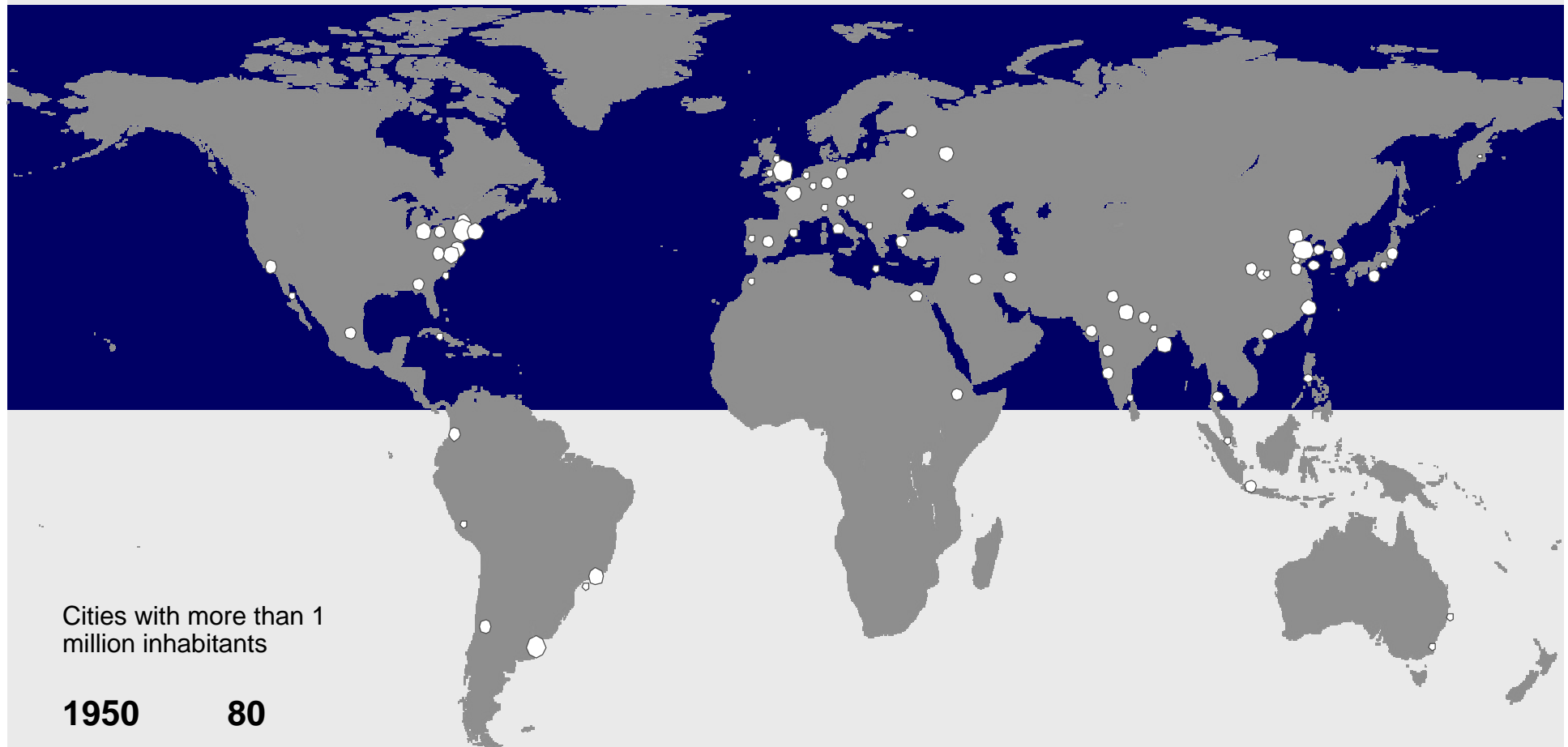


World Urban Population

Over the next 25 years, the growth of cities at the global level will produce 2 billion new urban citizens.

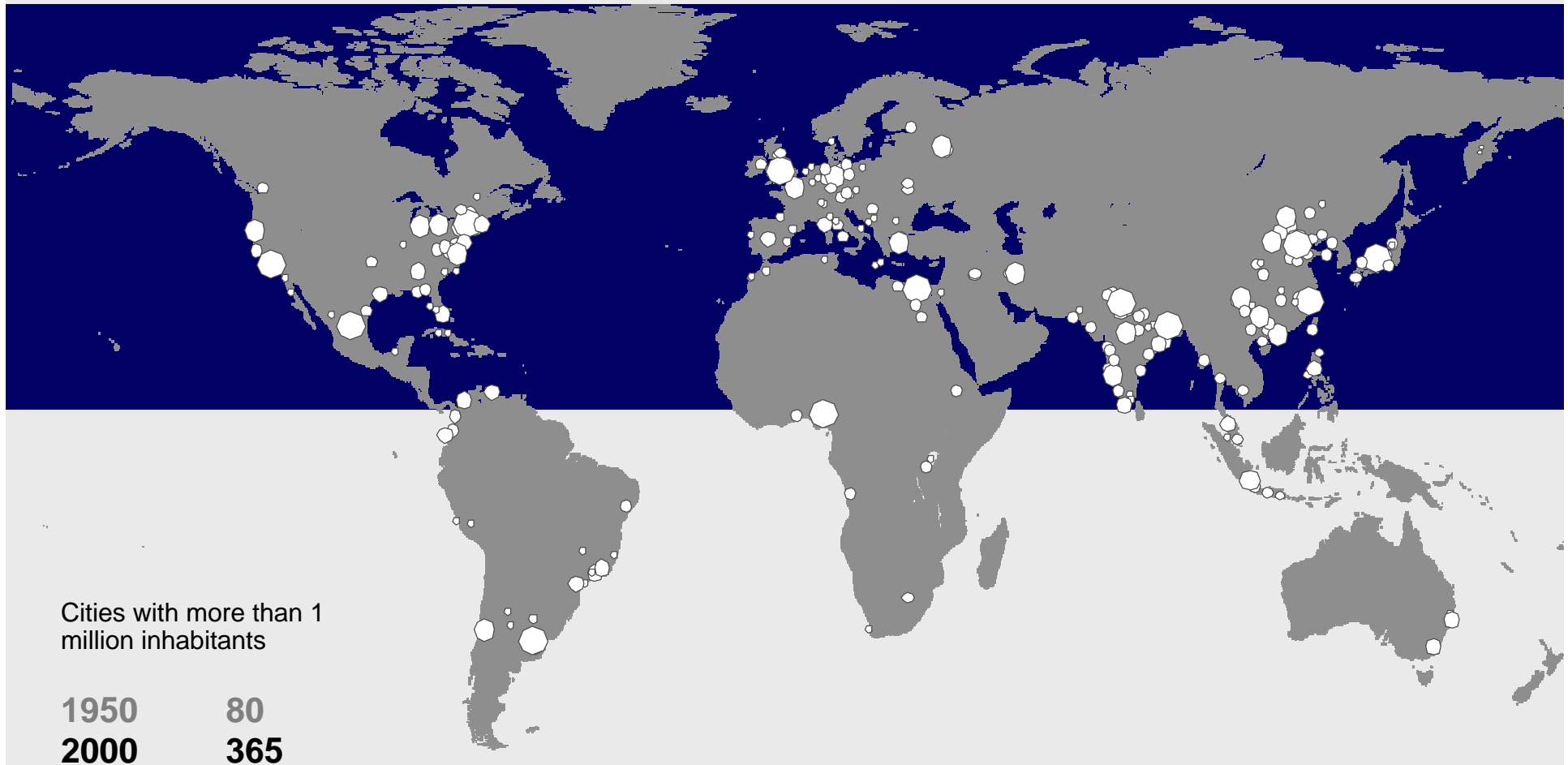
## Cities in a “Globalizing” World

At the start of the XXI century, our cities are experiencing some of the most profound transformations in the history of humanity.



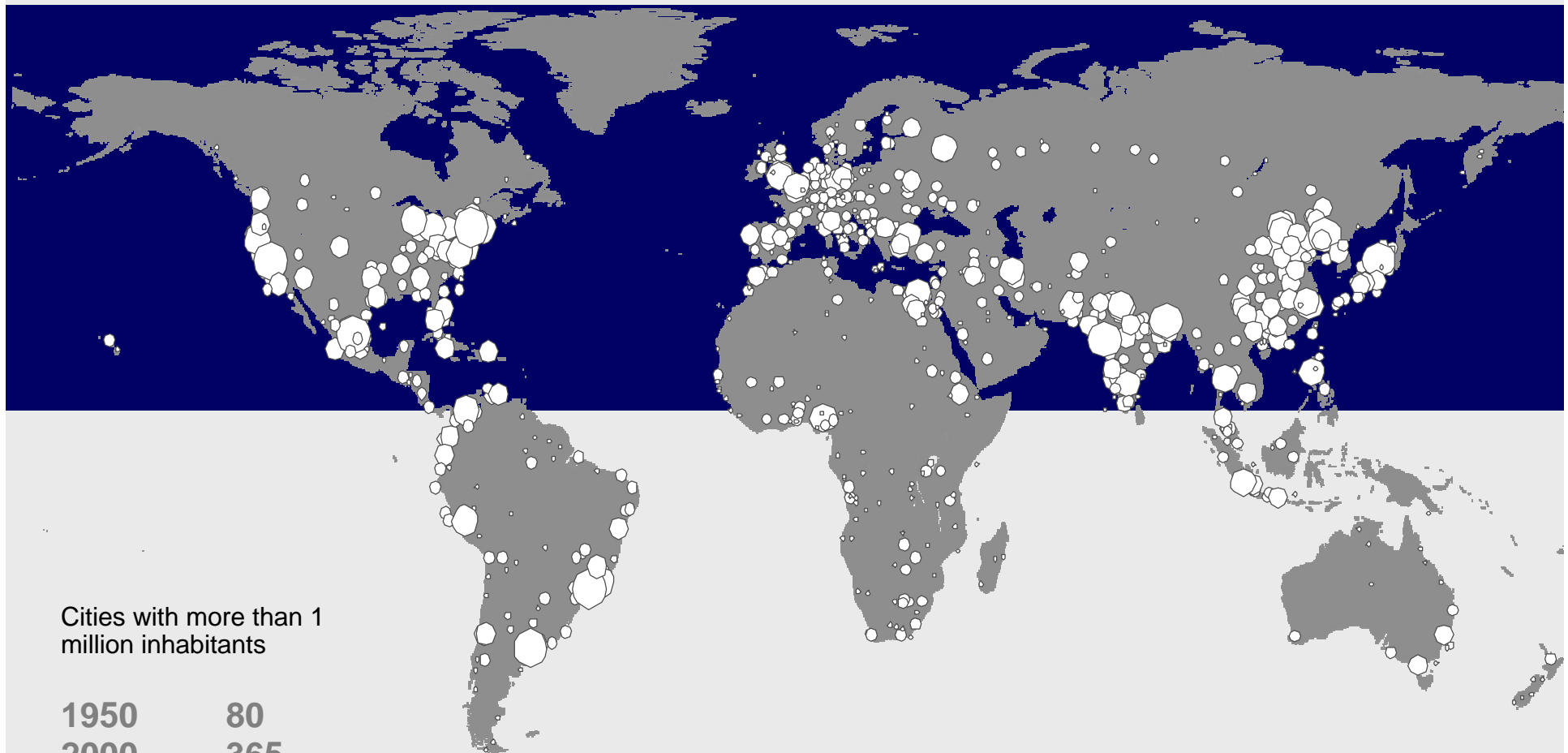
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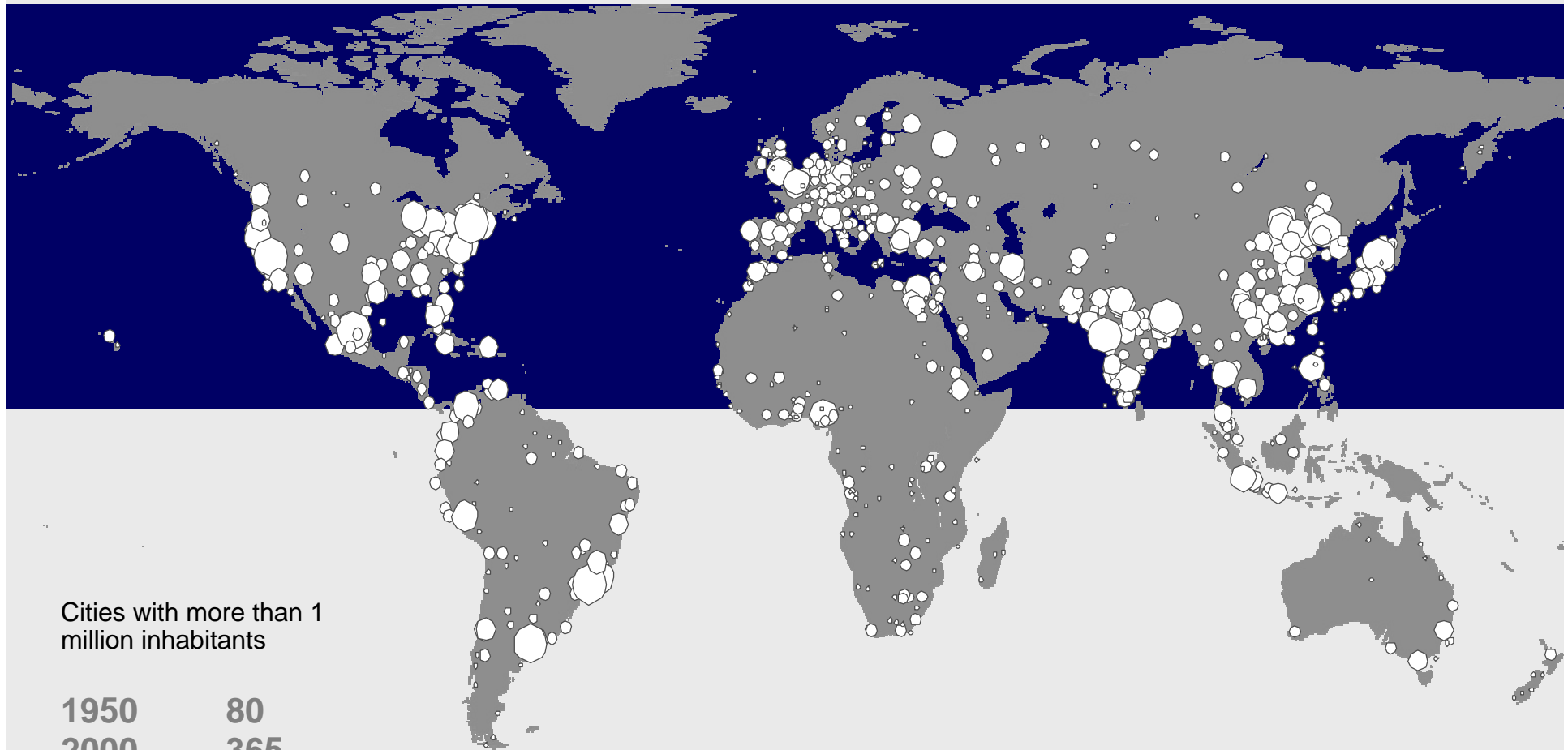
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## Cities in a “Globalizing” World

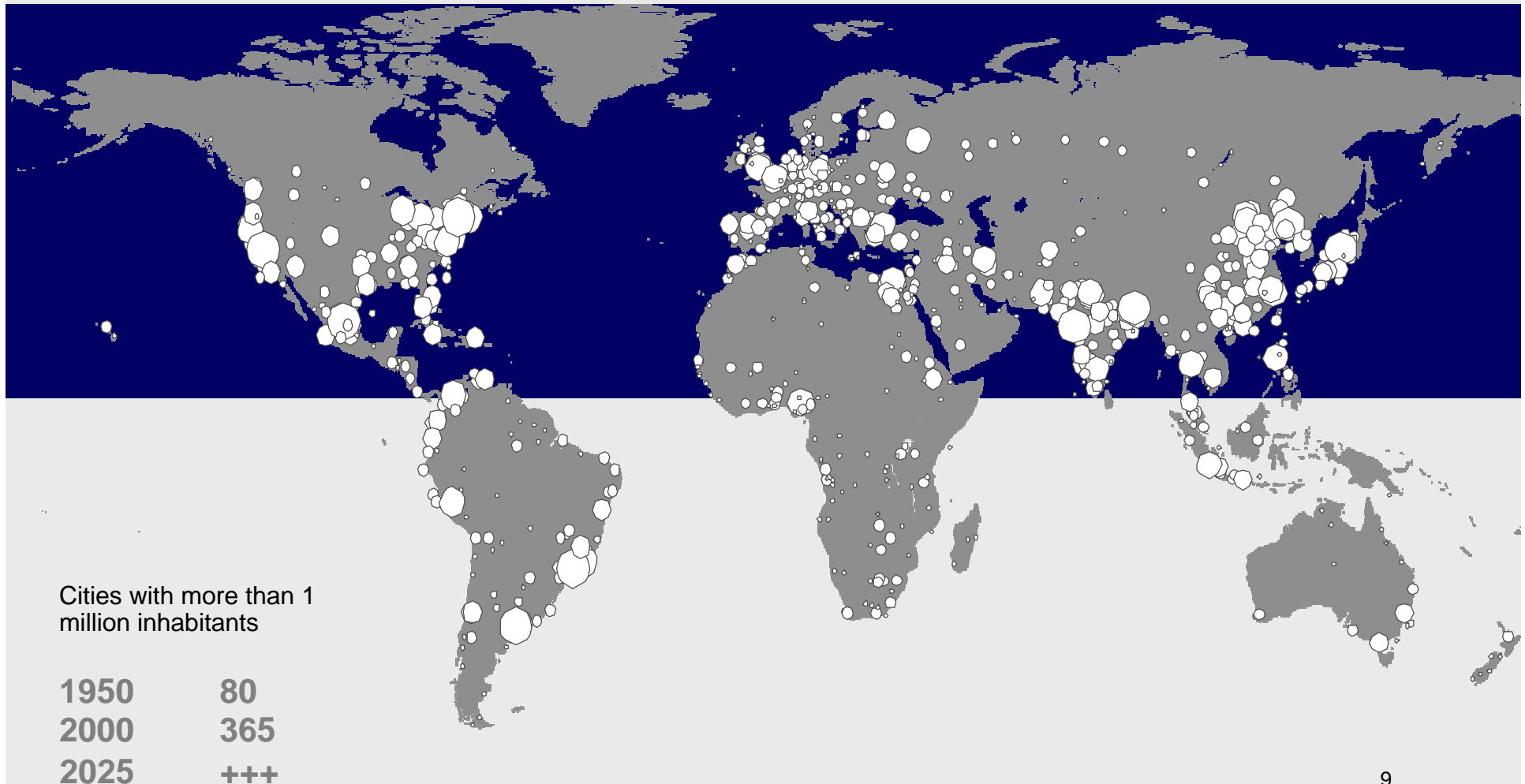
Cities and their regions are the leadership nodes of ideas, culture, economy and society ...





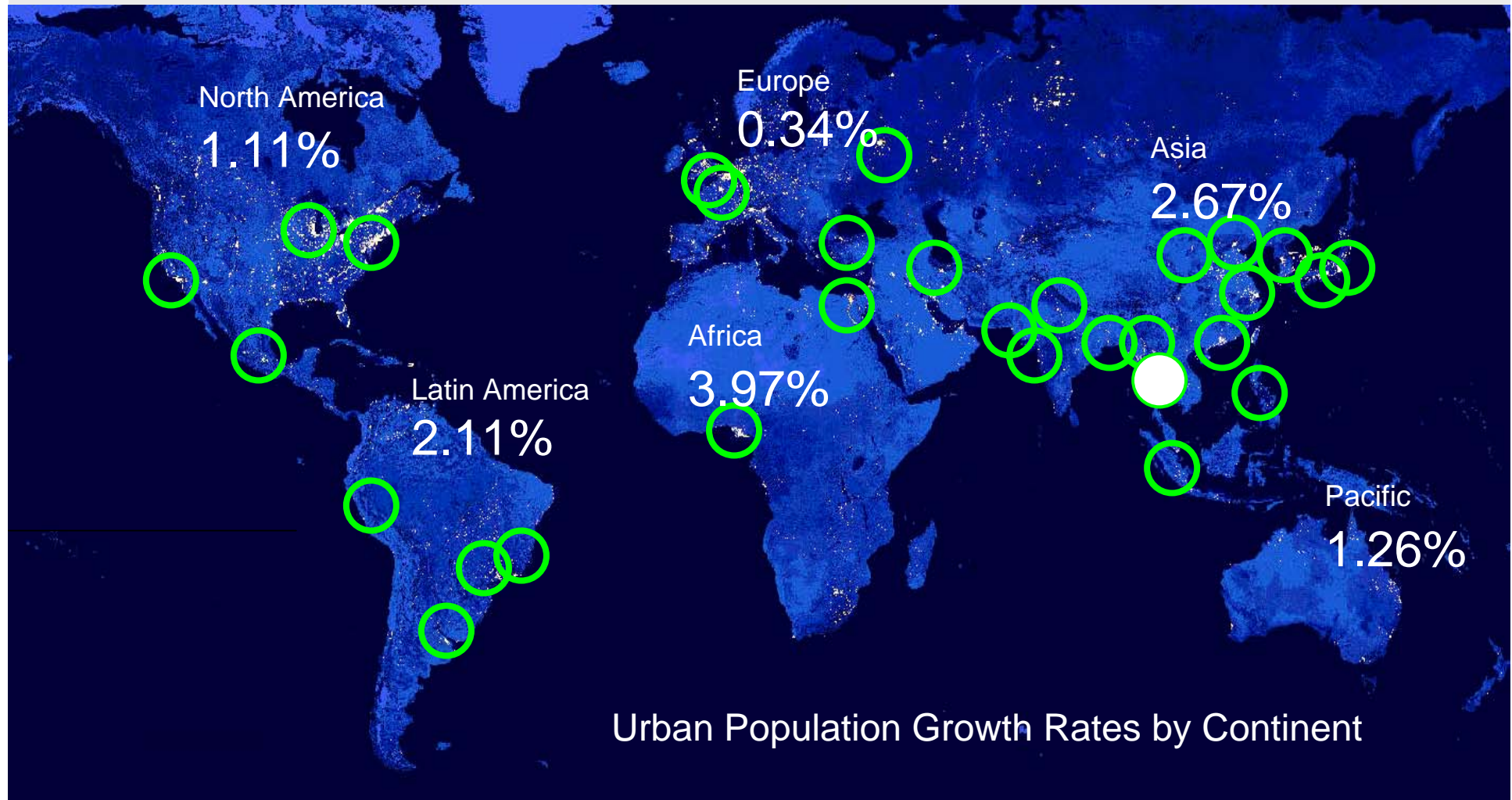
## Cities in a “Globalizing” World

But here we also find enormous concentrations of poverty ...  
and many of humanity’s greatest challenges.



Cities in a “Globalizing” World

## The 30 Largest Urban Agglomerations (2003)



As a summary of the introduction:

## Key issues, and strategies for rapidly growing urban regions

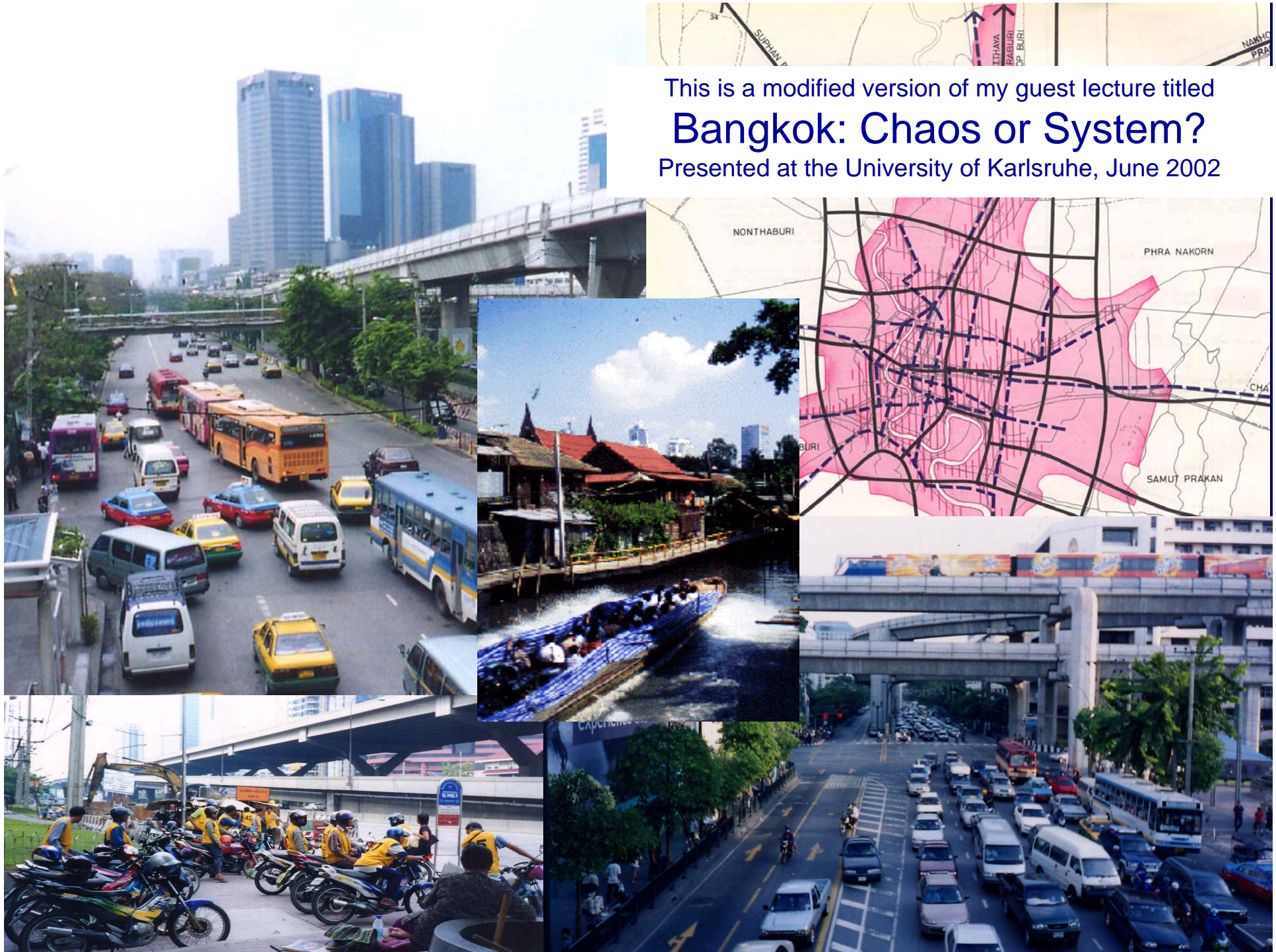
- Sustainable development as an **ambitious policy / goal**, or as the “utopia of the early 21<sup>st</sup> century”(?)
- Democratic governance (empowerment) as the overall **delivery mechanism**
- Neo-liberal faith in market mechanisms, including the full acceptance of globalization as **inevitable(?)**
- Key drivers of mega city development:  
**FDI, national planning, and mobility / accessibility**
- Mitigated by responsive government and **civil society**
- “Urban bias”? Importance of **rural-urban linkages and intermediate cities** re-emphasized



This is a modified version of my guest lecture titled

# Bangkok: Chaos or System?

Presented at the University of Karlsruhe, June 2002



# Mega Cities III: Bangkok Development and Transport

## **1. Background: The Bangkok Transportation Study**

2. 30 Years of Urban Development in Outline

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6. Some Conclusions





## Personal Background: Bangkok Transportation Study, 1971-1975

- One of three Mega-Projects of German Technical Co-operation: Assistance in urban transport management, plus export of transport planning know-how
- Multi-disciplinary, broad strategic approach
- Large expert pool in Bangkok – in 1973, a full soccer team...
- Significant innovations (methodology, computer simulation)
- Essential strategic recommendations on transport policy – still referred to today (sometimes)
- Thai Government follow-up on urban mega investments (MRT and Freeways) politically untenable until at least 1985
- German follow-up declined after 1975 – focus on rural development (but returning to urban focus 15 years later...)

# Assumptions (1972) – Reality (2003)

(Bangkok Transportation Study, completed in 1975)

## Explicitly:

- Urban planning exists and works
- National pop'n growth grows at 1% per year
- Projected growth (Greater Bangkok)

Wrong! Still rather poor...

Much faster, down to < 1%! )

Correct estimate

## Implicitly:

- Long-term projection of change for the whole country
- Role of the private sector
- Linkages with and impact on other sectors
- Changes of public awareness

Dynamics impossible to imagine

More important than assumed

Much stronger than anticipated

Much more than ever assumed

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2003: Bangkok self-presentation in the Internet



1975: Only two high-rise buildings ...





Rajdamri



Siam Square



Silom



# Urban development 1972 – 2003 in a nutshell

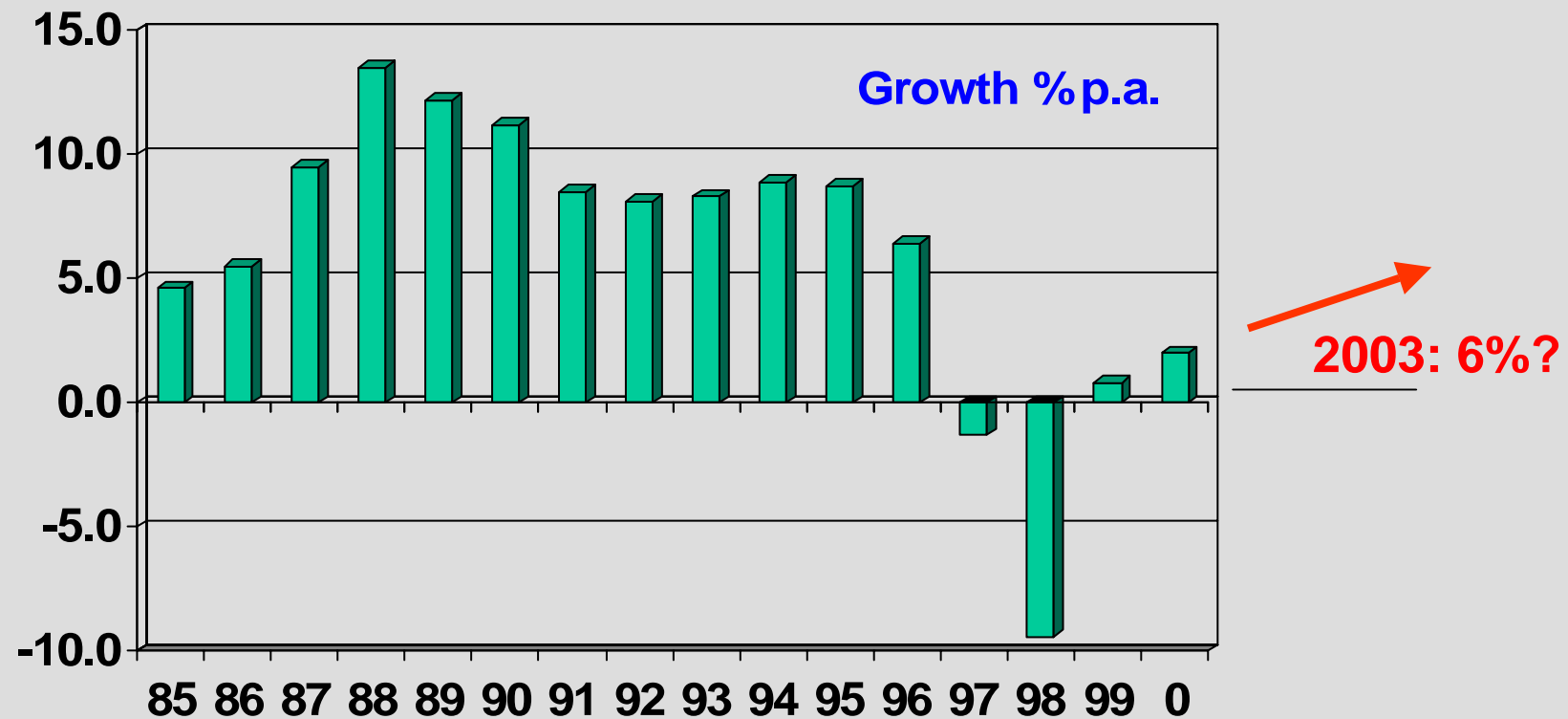
- Enormous growth: Population, economy, spatial expansion
- Growth and structural change without any significant influence of urban planning (until very recently)
- Main factors or “drivers”: Accessibility (mainly public providers), plus Land Development (private sector)
- Economic structural change in the extended metropolitan area: Manufacturing >>> Services
- Spatial transformations: Several CBDs, leapfrogging, land fragmentation
- “Models”: Tokyo, Los Angeles >>> Asian Mega City
- Bangkok as one of the typical patterns of urbanization in Asia (but there are many fine differences among cities!)

# Trends (1): National population growth, Thailand

	Average growth rate of total population (% per year)		
	1950-55	1965-70	1995-00
Papua New Guinea	1.56	2.40	2.22
Philippines	2.61	3.17	2.11
Bangladesh	1.70	2.68	1.70
Mongolia	2.20	2.76	1.65
India	2.00	2.28	1.64
Viet Nam	1.33	2.17	1.55
Indonesia	1.69	2.33	1.43
Myanmar	1.85	2.29	1.24
Down to 0.60 (2002)			
China	1.87	2.61	0.91
South Asia	2.03	2.39	1.76
Southeast Asia	1.92	2.52	1.53
East Asia	1.75	2.44	1.38


Source: ESCAP, 2001

## Trends (2): National economic growth, Thailand



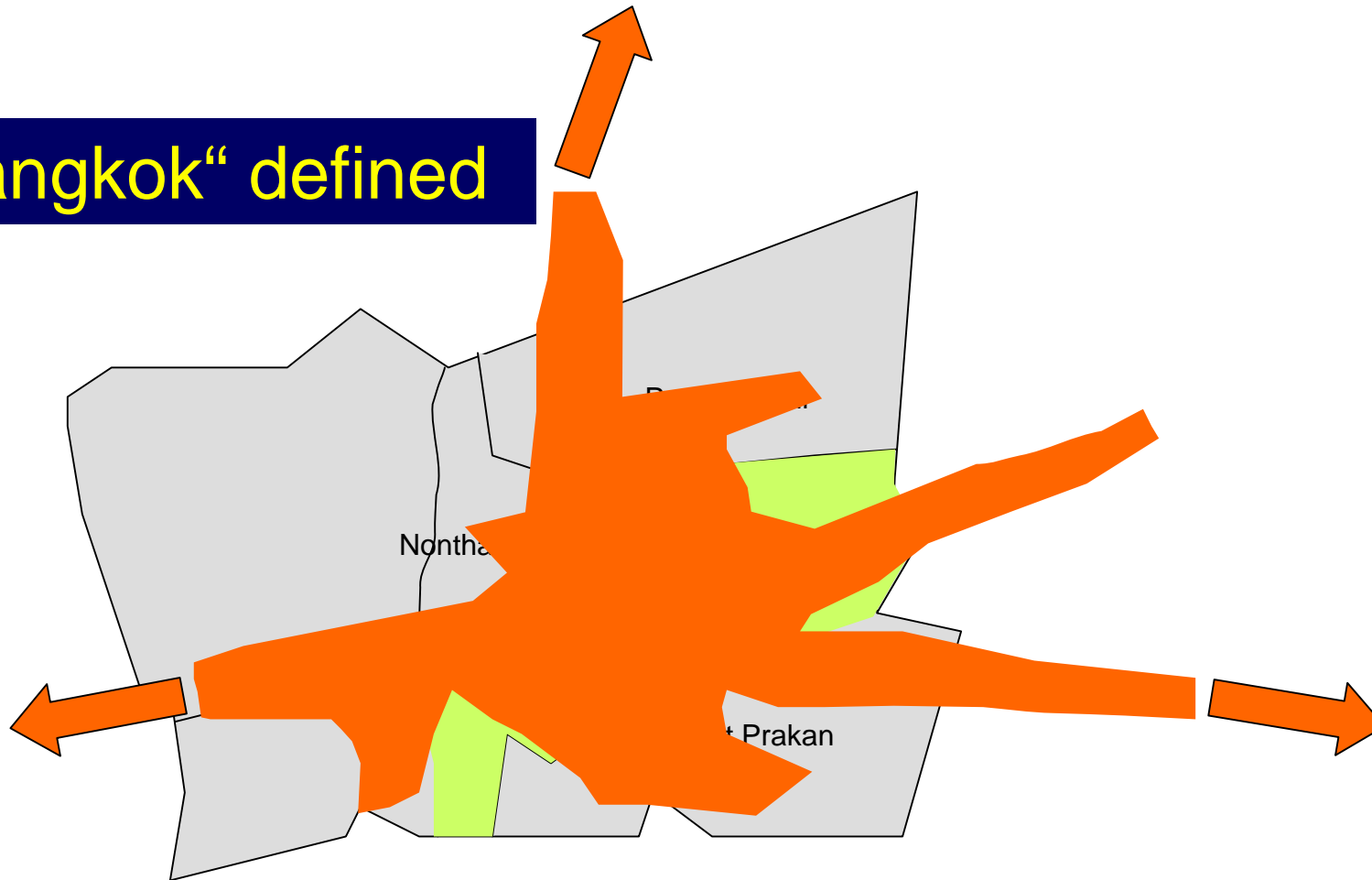
# Trends (3): Primacy of the Bangkok Region

Comparison between “Bangkok and Vicinity” and Thailand as a whole

	Population (as of Dec. 1999)		GRP (1997, at current market prices)	
	Million persons	%	Million Baht	%
<b>Bangkok</b>	5.663	9.2	1,835,518	38.9
<b>Vicinity of Bangkok</b>	3.646	5.9	552,855	11.7
Subtotal	<b>9.309</b>	<b>15.1</b>	<b>2,387,373</b>	<b>50.6</b>
Richest subregion (Eastern subregion of the Central Region)	4.141		501,487	10.6
Poorest region (Northeast)	21.379		557,148	11.8
Thailand total	61.662	100.0	4,724,104	100.0

Source: Compiled from *Thailand in Figures*, 2001

## “Bangkok” defined



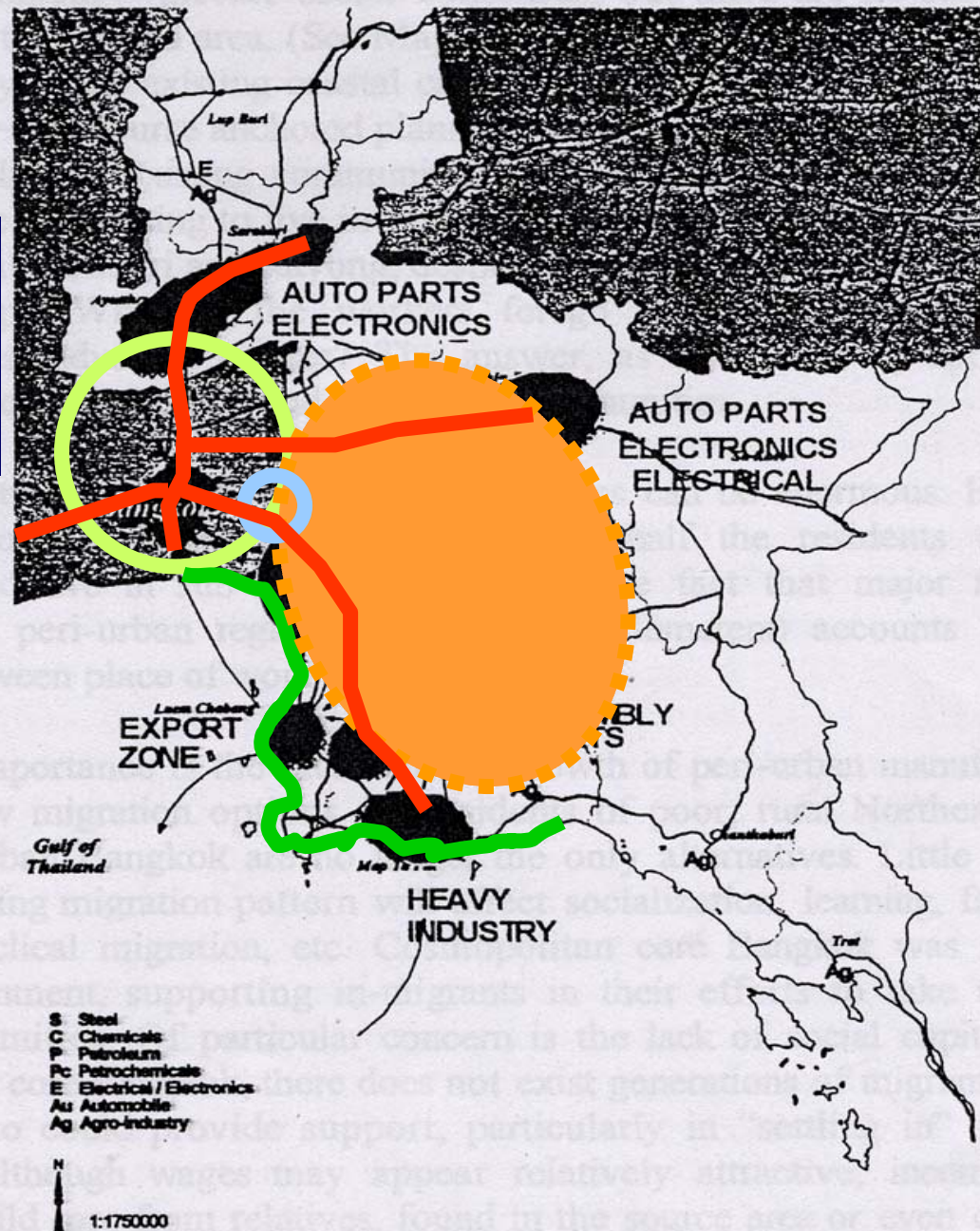
1. BMA only - 1500 km<sup>2</sup>
2. Greater Bangkok: BMA + 3 Provinces - 4500 km<sup>2</sup>
3. “Bangkok and Vicinity”: BMA + 5 Provinces - 7500 km<sup>2</sup>
4. “Extended Metropolitan Region”; and “Industrial Heartland”



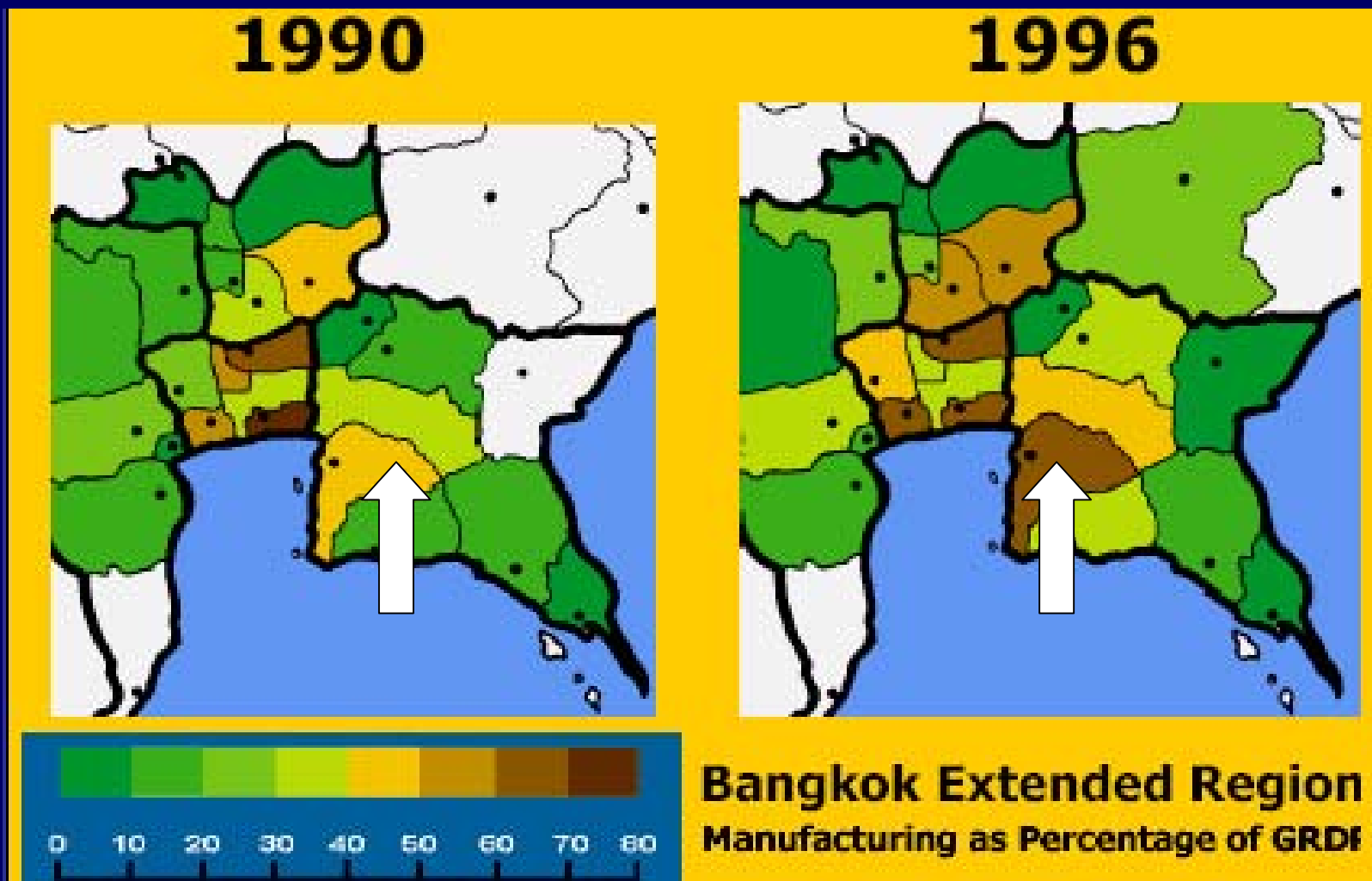
## Industrial Clusters : Peri-Urban Bangkok

### Extended Metropolitan Region

- Eastern Seaboard
- Industrial clusters
- Transport corridors



# Peri-urbanization Process in the Extended Bangkok Region



Source: Webster, 2001

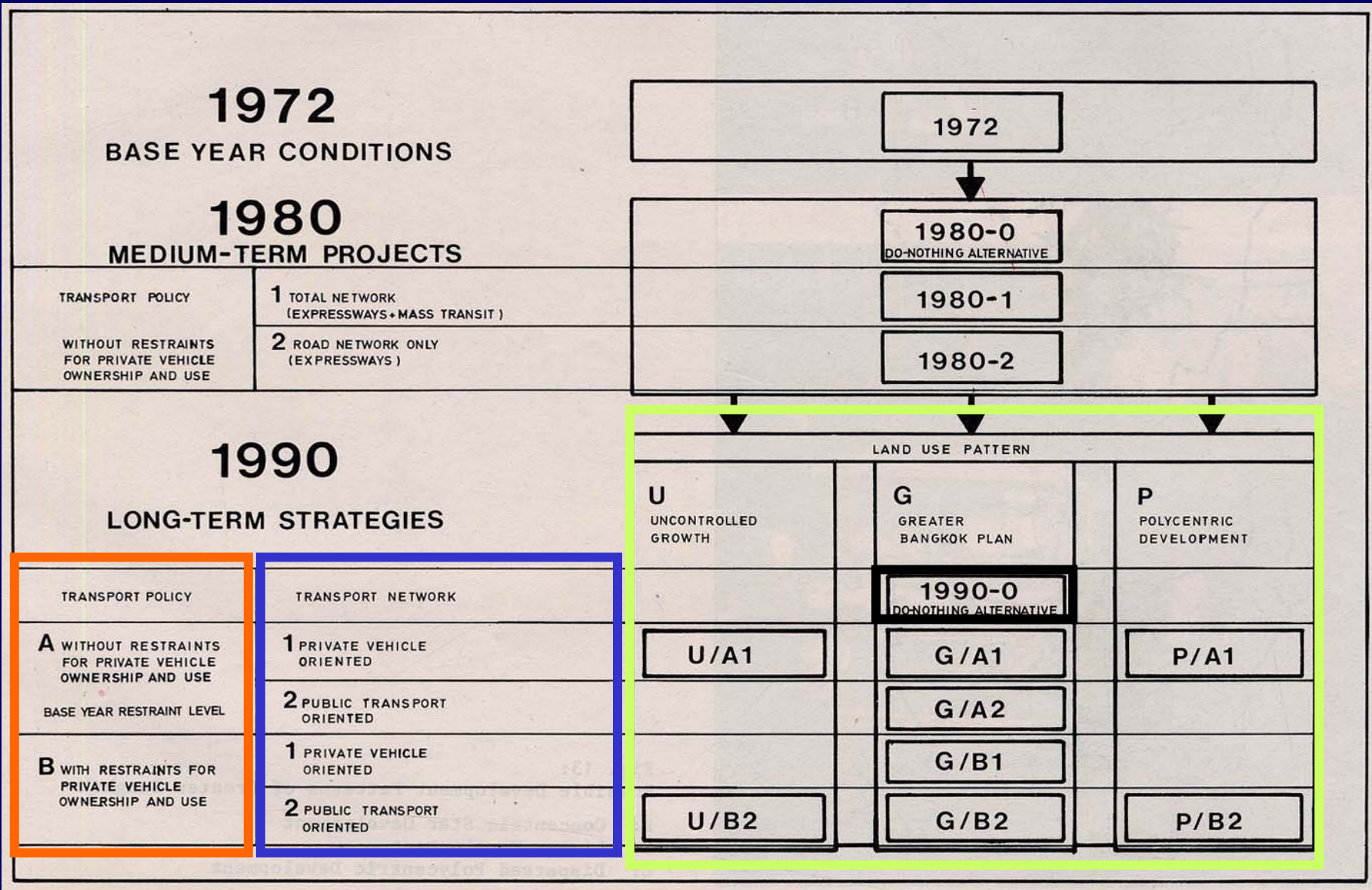
# The extended Bangkok Region:

## Differentiating opportunities, threats, management options

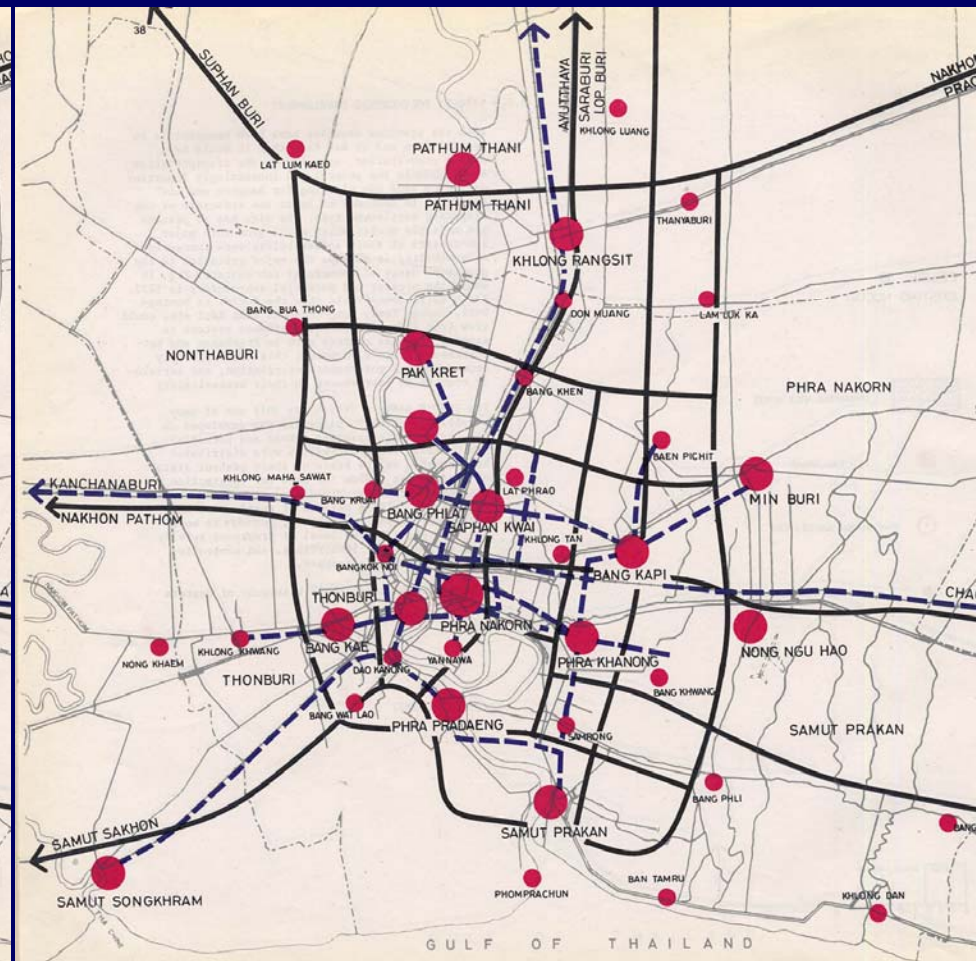
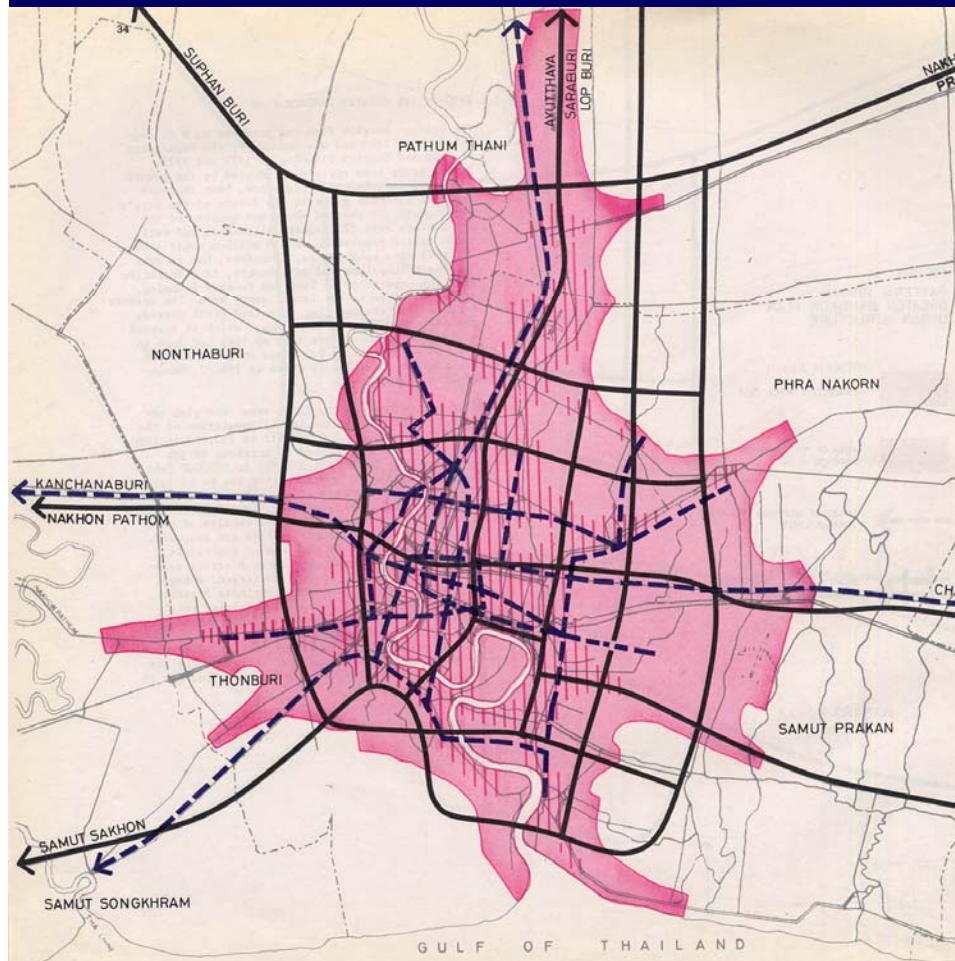
	Characteristics	Built form	Drivers	Population	Major threat
	Knowledge, tertiary economy	Polynuclear Mixed land use Hotels, offices, condominiums Mass rail transit	Global / national fusion & synergy	Increasingly 2 <sup>nd</sup> / 3 <sup>rd</sup> generation Slowing immigration	Too rapid deconcentration
	Residential (commuters) Retailing Mature (lower value) industry	Suburban "villages" ( <i>muban</i> ) Gated communities Mega malls Expressways Radial development (North & East)	Thai property developers	Households from Core, seeking space at affordable price Some worker housing	Mature industry threatened by international competition (Samut Prakan, Pathum Thani, e.g.)
	Industrial estates Industrial support infrastructure	Industrial estates Ports Spontaneous (squatter) worker settlements	Exogenous FDI driven Infrastructure loan driven (OECD, e.g.)	Rural migrants primarily from Northeast	Overly dependent on exogenous drivers



# BKK Transportation Study (1971 – 1975)



# Alternative Land Use Scenarios, Bangkok Transportation Study: (1) Uncontrolled Growth (2) Polycentric Development



(3) Similar Pattern: Greater Bangkok Plan (1960-1992!) – not shown here



## Bangkok Transportation Study – a Summary Comparison: Recommendations (1975) - Reality (2003)

### Five principles:

- Promote polycentric infrastructure provision
- Public investments (MRT and bus network)
- Secondary investments
- Reduce vehicle ownership
- Consolidate the institutional coordination by Metropolitan

1. Polycentric structure not planned but grown by market response to accessibility (shopping malls, offices)
2. MRT: Rather slow Bus: Not too bad
3. Freeways unbelievably dynamic
4. No real attempt
5. Rather poor, ever since 1975...

### Specific recommendations

- Flexible management
- Police: Hands off the

1. It exists now, after much manoeuvring
2. Hard to believe: Still there...



## One of several perennial Mega Projects

Suwannaphum International Airport: Opening finally in 2008?

(It has been under consideration since the 1960s, and under construction for more than 10 years)....

Source: BKK website



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# Public Transport Systems

## 1. Bus systems:

- Considerable improvements (management, bus fleet)
- Growth of the network
- Differentiation within the system

## 2. Private components of the public transport system:

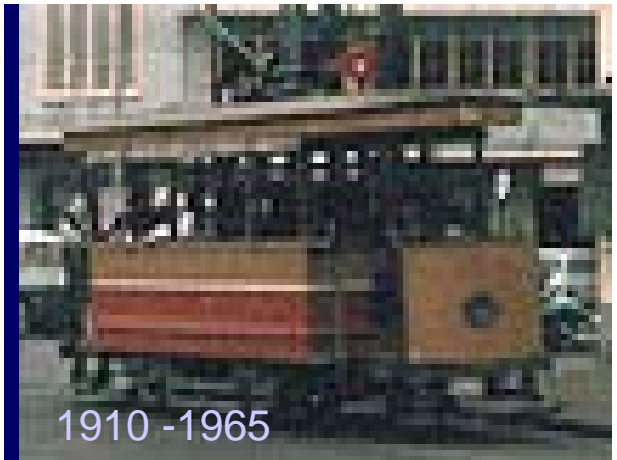
- System extensions and improvements
- Microbus (long distance, demand driven), *Soi Bus*
- Taxis, *Samlor/Silor*, motorcycle “taxis”

## 3. MRT system:

- The complex drama of the Bangkok Mega Projects..., and
- The first success story: BTS (an international joint venture)



1920



1910 - 1965



1940



1960



1970

Public transport background

# Public transport (1): Many different subsystems (formal and informal) in a large system







Private public transport (2):  
Amazingly fast and flexible  
response to demand



## Public transport (3): BTS feeder bus (free of charge) as an extension to the „skytrain“ >> system integration





# MRT Systems: Politics and Planning

Year	<b>MRTA Subway</b> (formerly "Skytrain")
1976	Cabinet resolution for MRT; feasibility studies, design; bids for private investment ....
1985-1990	Bids invited, Lavalin (Canada) successful, concession approved
1992	Lavalin terminated MRTA founded
1993-1995	BOT concession given & scrapped; system to go underground

For many years (1976 -1990):  
No implementation

Main reasons:

- National political priorities
- Institutional chaos

# One, two, three ... MRT Systems in competition

Year	MRTA Subway (formerly "Skytrain")	Hopewell Project (MRT + Expressway)	Bangkok Transit System (BTS – "Skytrain")
	Nearly 20 years lost in incoherent decisions and haggling	Everything lost - Time and money...	15 years lost, but then...
		1990: Concession without design or feasibility work (!)	1991: Bids invited
		1997: ...	1992: ...
		1997: ...	1993: ...
1997	Construction of "Blue Line"	1997: ... contract scrapped	1999: ... under ... 1995: ...
2003	Slow progress, expensive project	Open question: Continuation – scaled-down project?	Dec. 99: Opening  Plans for extending lines

(1)  
Unbelievably  
sloppy and  
corrupt  
project...

(2)  
Fast, efficient...  
A ray of hope  
for Bangkok

(3)  
Slow progress,  
expensive project

# The Hopewell Saga, hopeless...

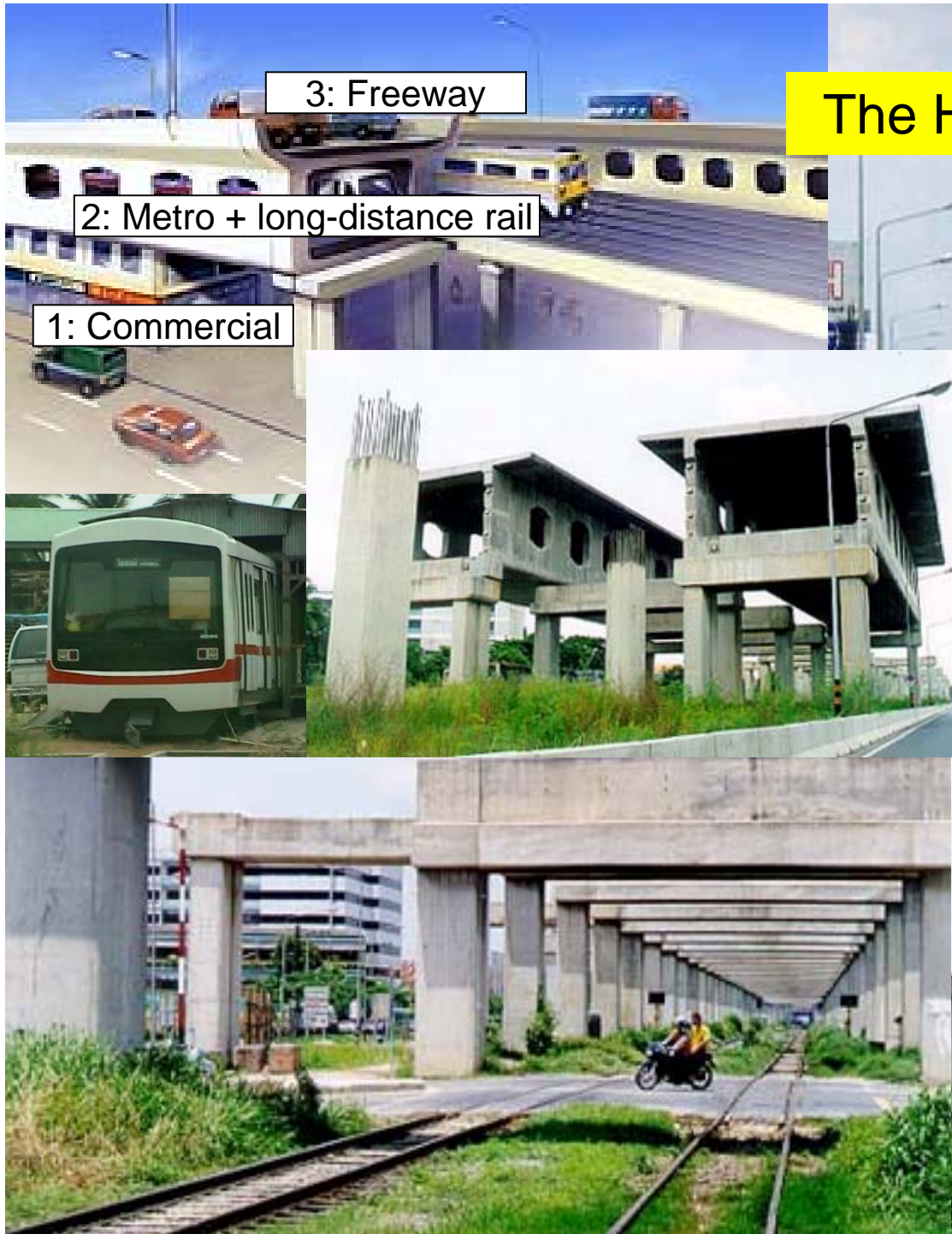
3: Freeway

2: Metro + long-distance rail

1: Commercial



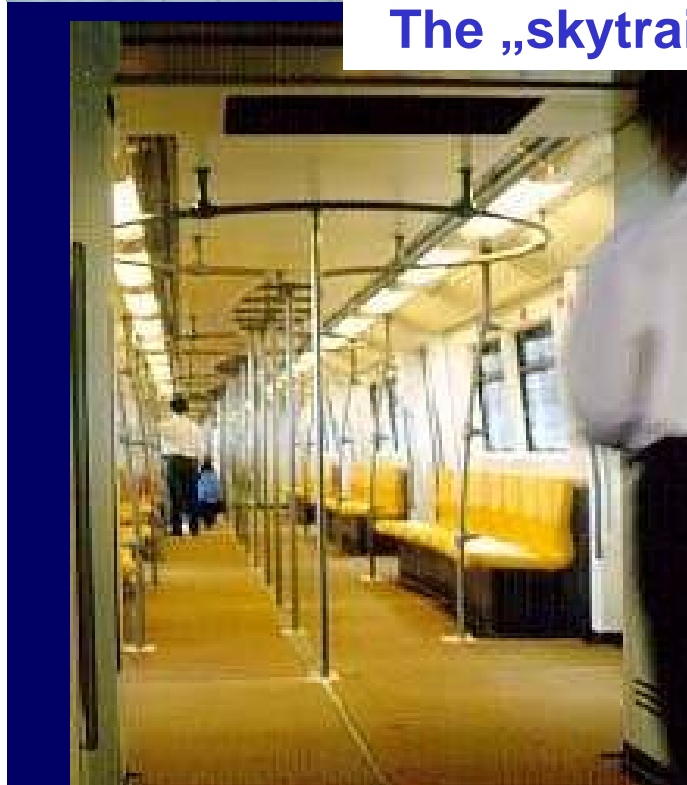
Hope again?







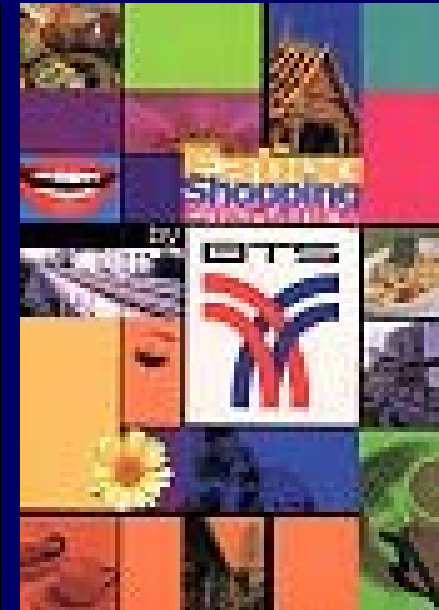
The „skytrain“ (BTS) in full swing since December 99





## BTS

The commercial use of the limited network is increasing faster than the passenger numbers



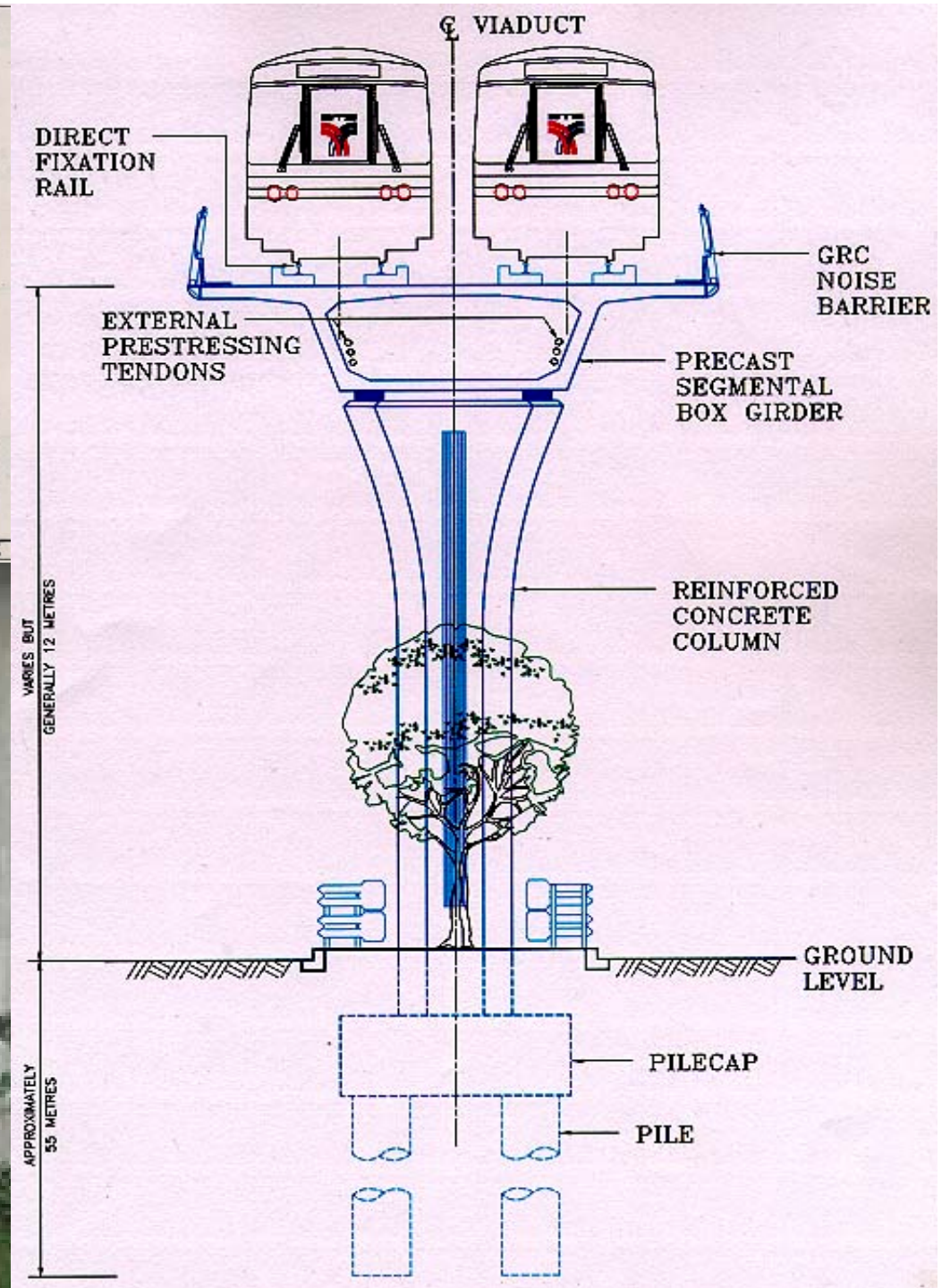
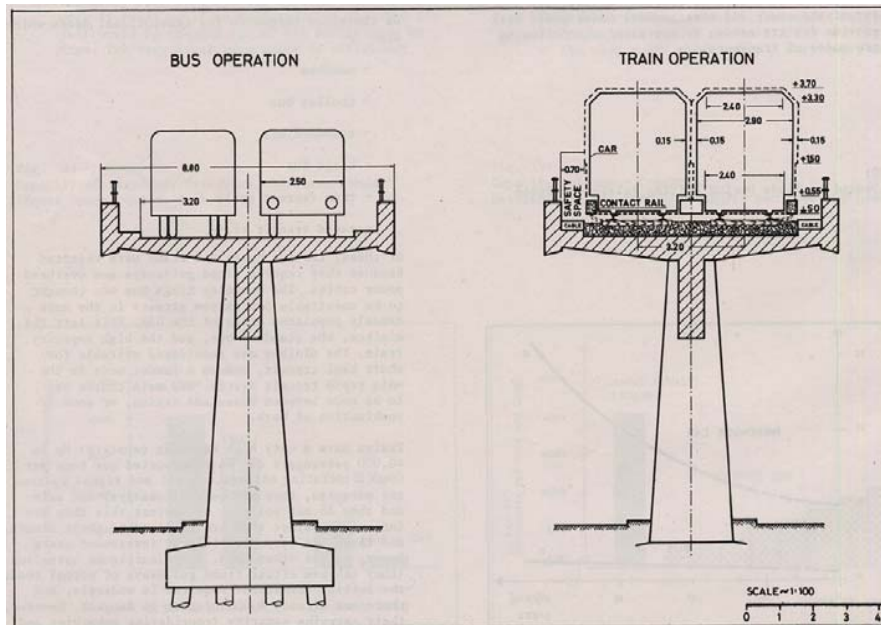
THREE CAR TRAIN



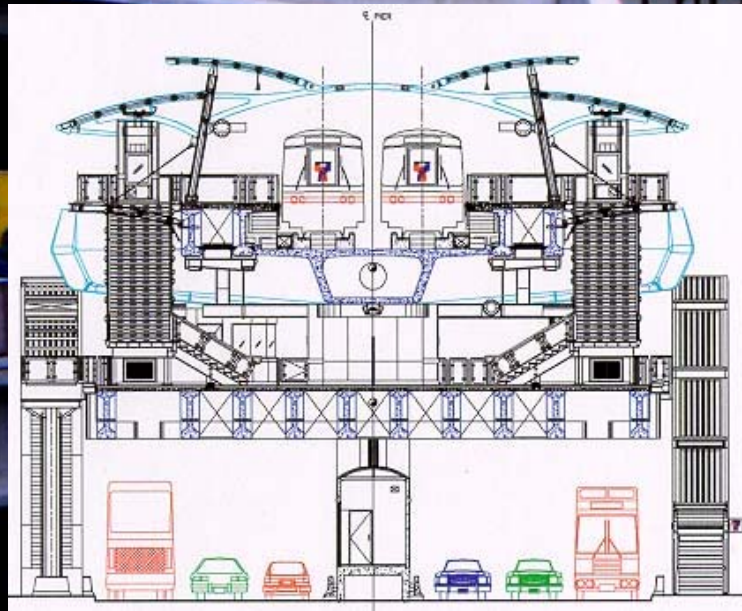
MRT Interchange Siam Square (and elsewhere):  
Heavy visual intrusion...



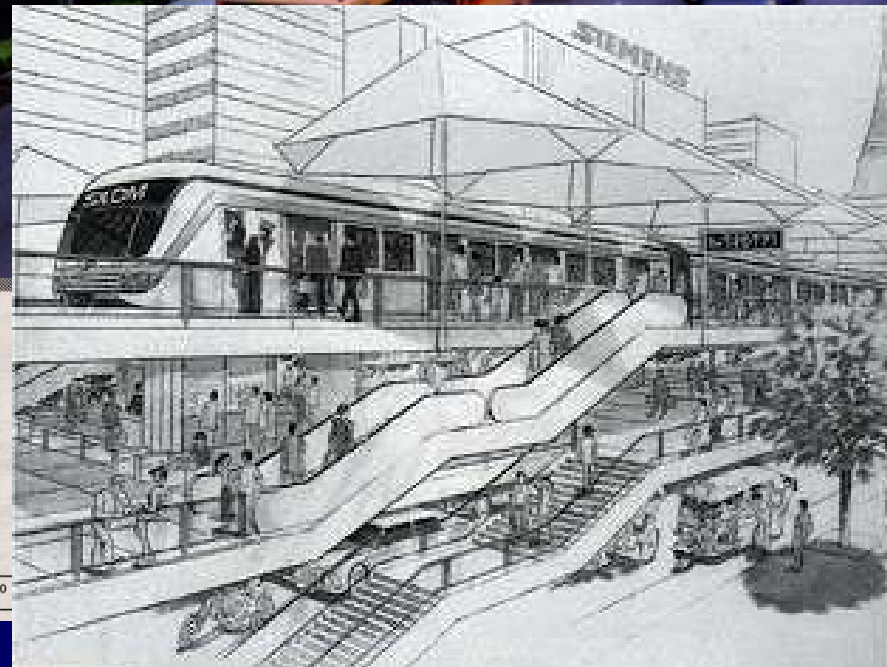




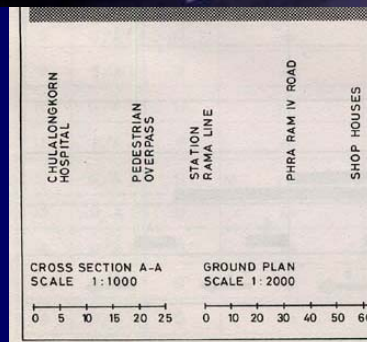




1999 (BTS)

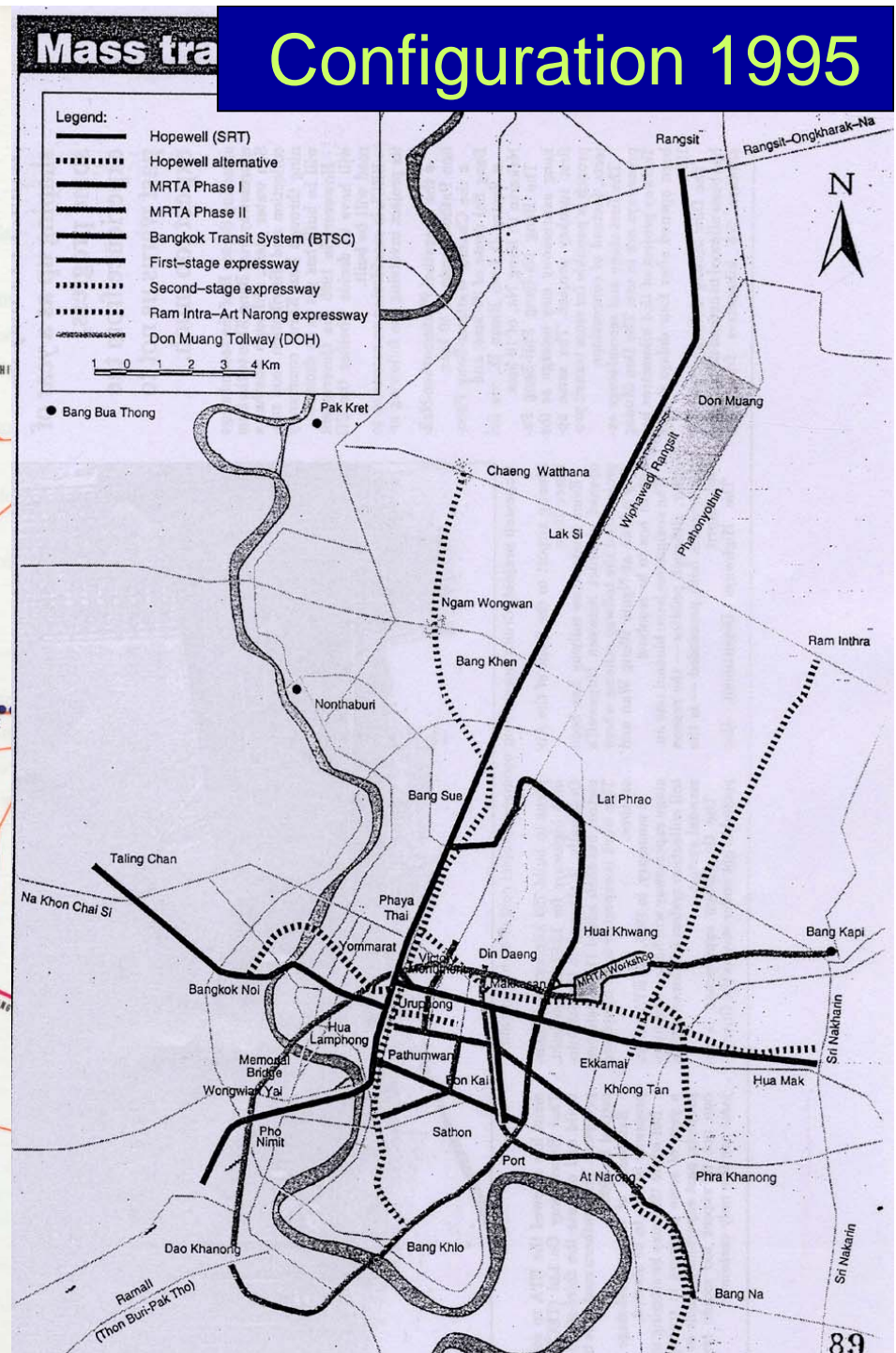
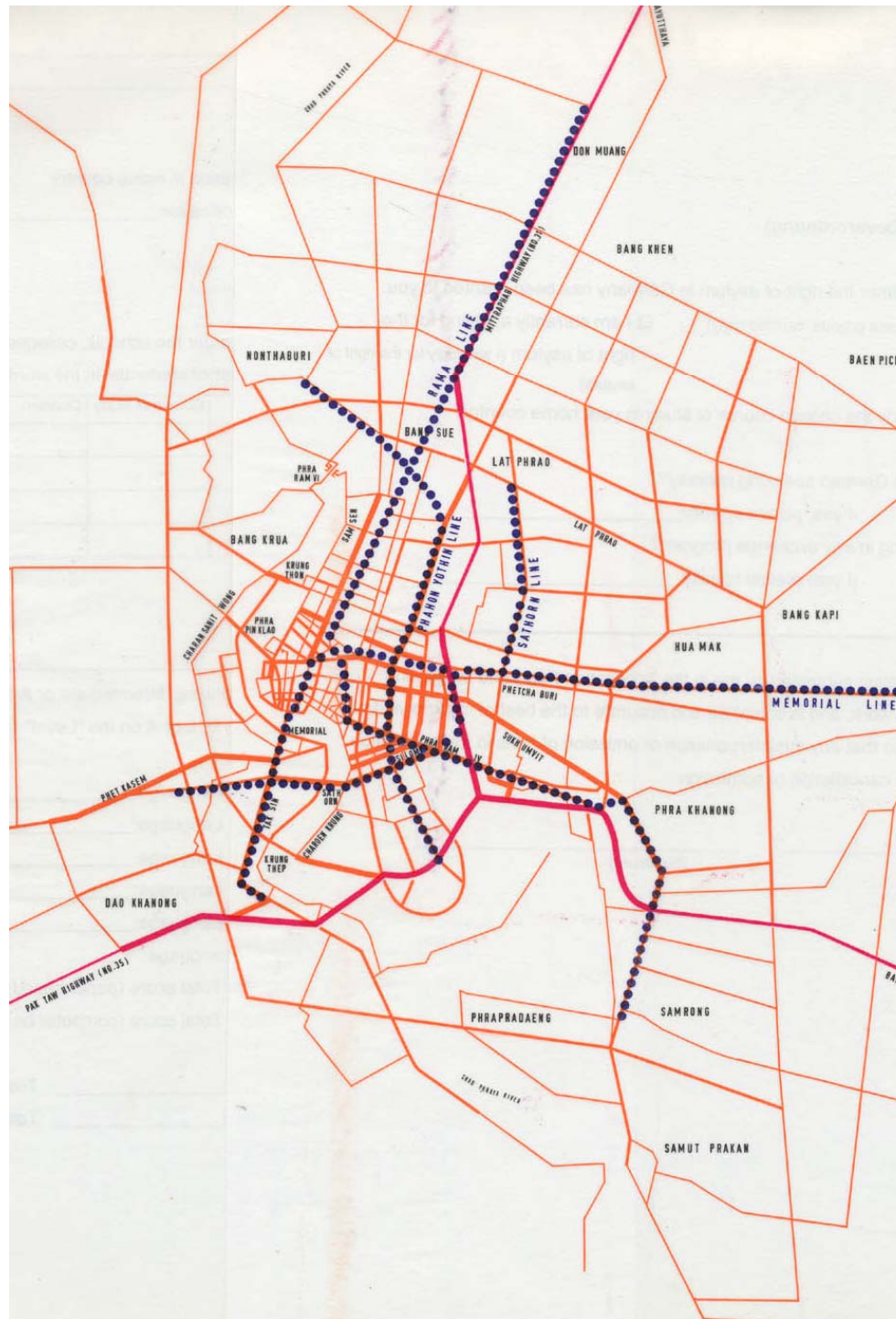


# MRT Stations





# Configuration 1995



— รถไฟฟ้ามหานคร สายเฉลิมรัชมงคล

• หัวลำโพง - ศูนย์การประชุมฯ สิริกิติ์ - บางซื่อ

.... รถไฟฟ้าสายสีน้ำเงิน ส่วนต่อขยาย

• ช่วงบางซื่อ - สะพานพระนั่งเกล้า

• ช่วง หัวลำโพง - บางแค

— รถไฟฟ้าสายสีส้ม ส่วนที่ 1

• ช่วงบางกะปิ - ฐานภูมิบูรณะ

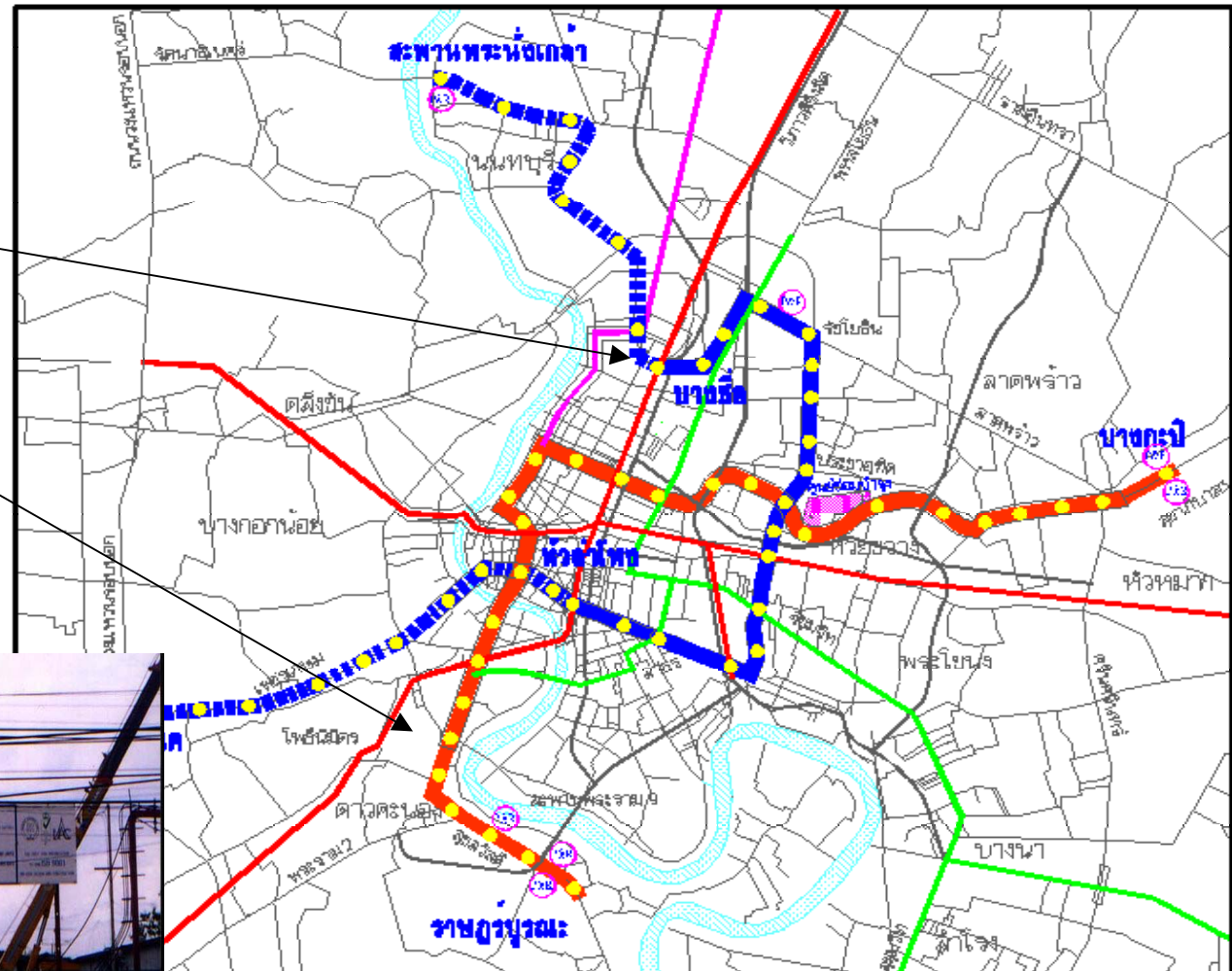
## Subway lines:

“Blue Line” – under construction

— First stage 2004?

... Second stage 2010?

“Red Line” – proposed



— โครงการรถไฟฟ้าสายสีม่วง

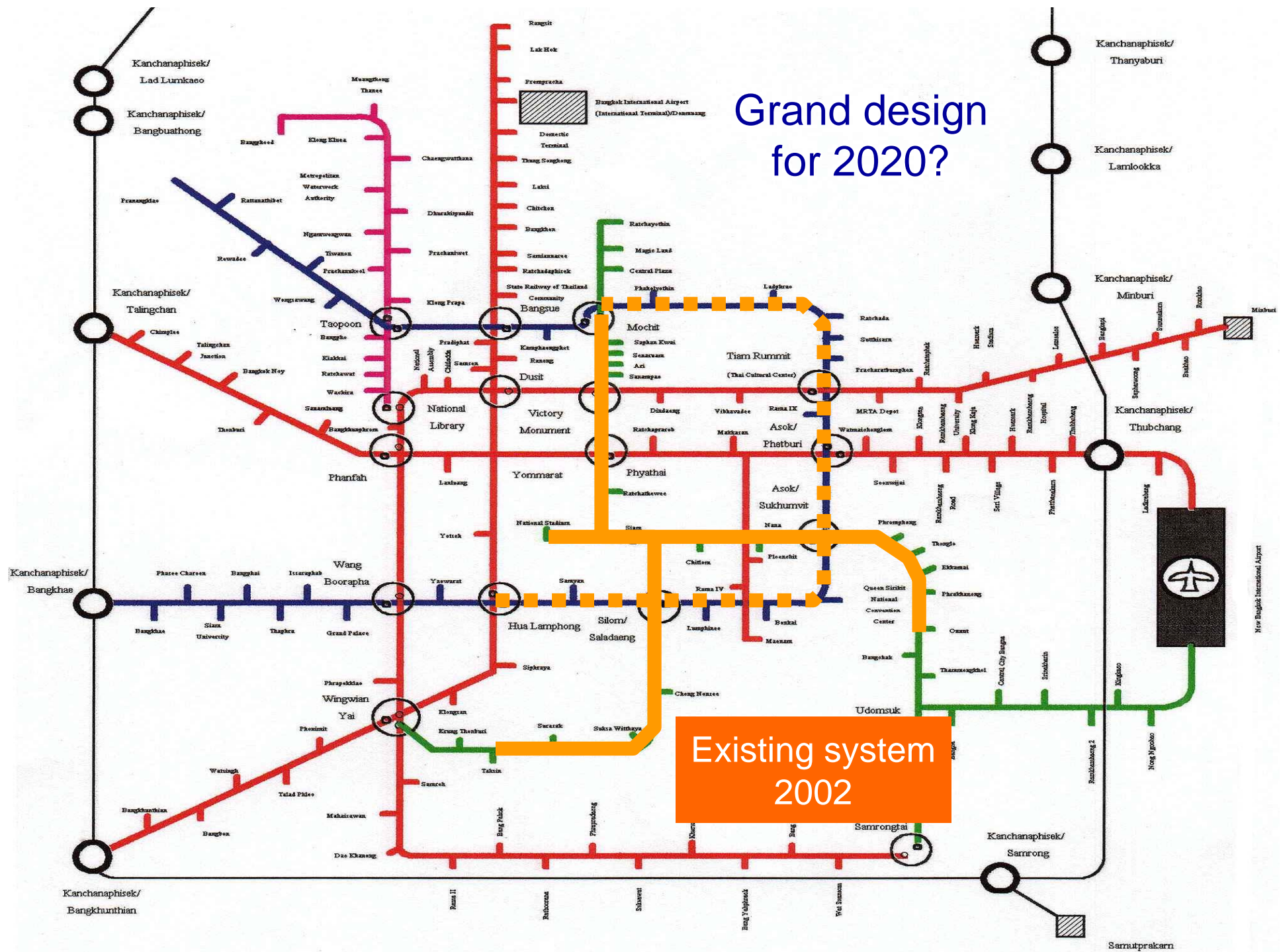
● ตำแหน่งสถานี

— โครงการรณนาย

○ ตำแหน่ง PARK & RIDE

— โครงการโฮปเวลล์







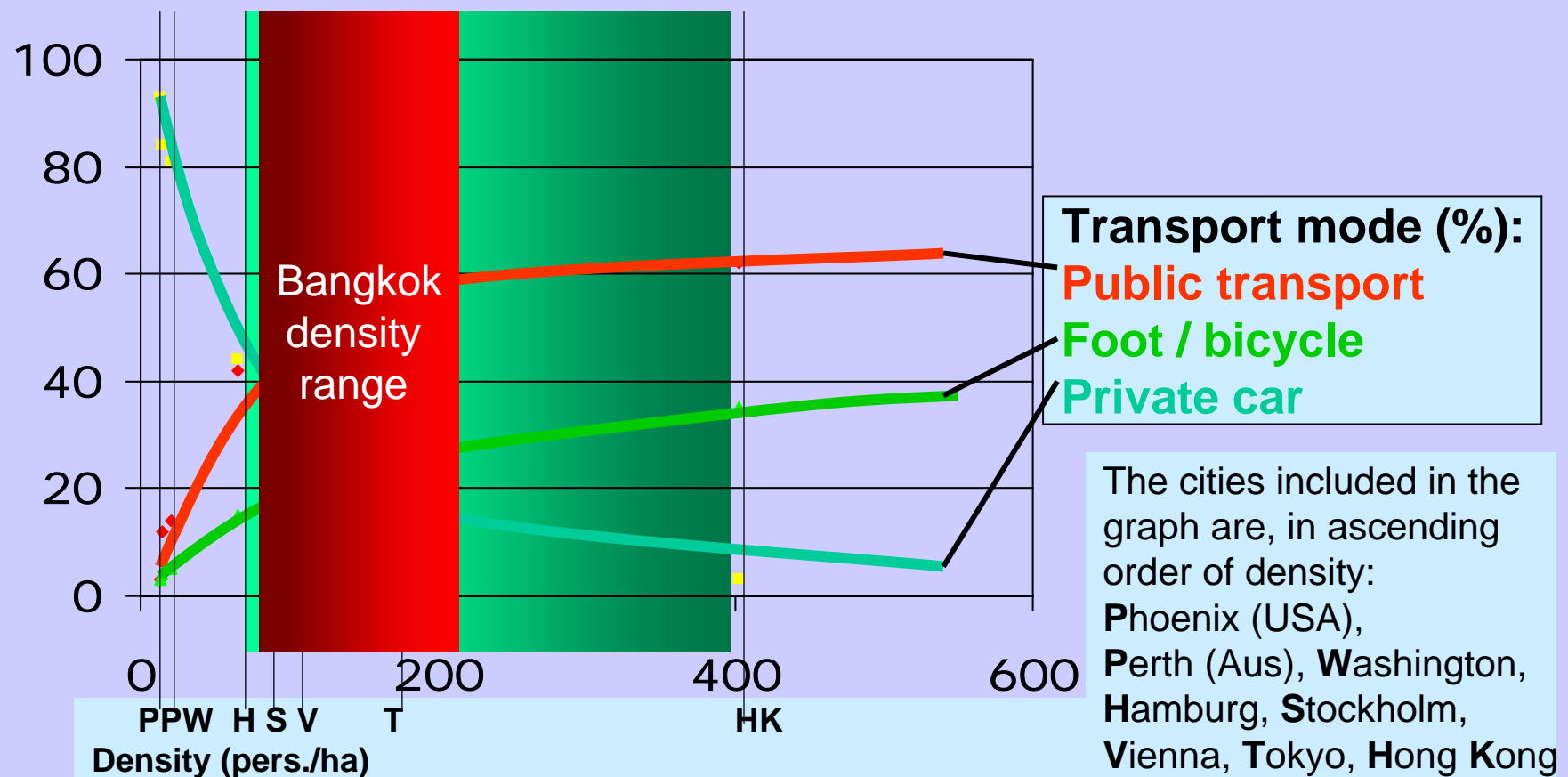
Another Governor's lovely (?)  
idea: The Klong Tram...

Boat traffic revived  
since 1980



# The transport - land use interface:

Density is absolutely critical,  
but overall urban density in metro Bangkok is decreasing



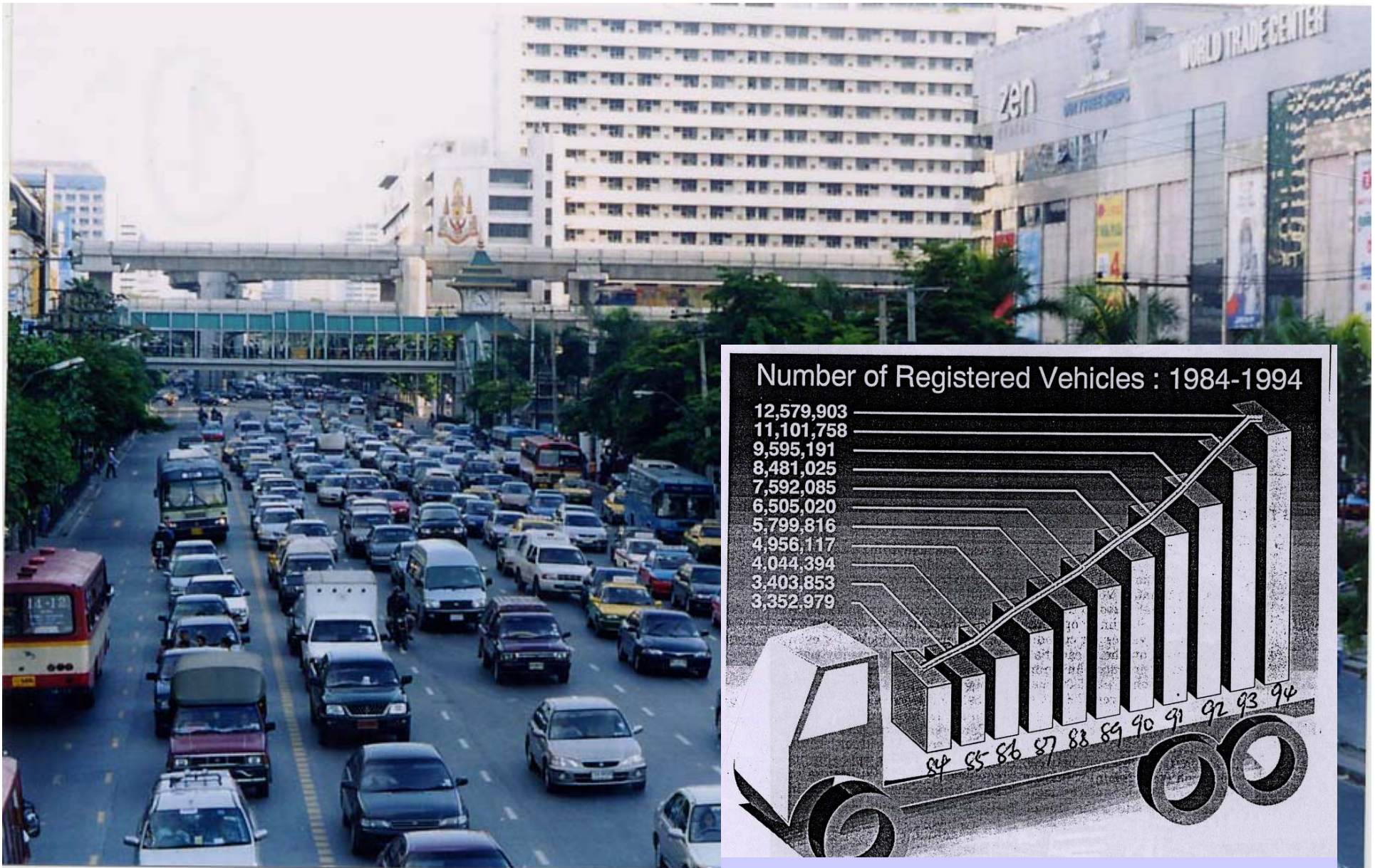


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# Private vehicular transport

- Motorization (2002): BKK 350 - 400 veh./1000 inh. (Greater BKK 250; Thailand 120; Europe > 500)
- Bangkok: > 80,000 taxis; 1.7 mil. motor cycles
- High mobility (public + private)
- Road network structure (hierarchy) still rather weak and unclear
- Overall road quality improved considerably
- Network express- / tollways: Starting 1980, massive increase since 1995, currently about 250 km(!)
- Nevertheless widespread congestion, but shorter peak hours than ten years ago



Bangkok = Traffic jams forever?

BKK Peak (1995/96): 555  
new cars registered per day





## Tollways, Expressways: Different Operators



Emulating Los Angeles – Unlimited expressways instead of mass rapid transit and market-based policies for inner cities?



**2b**  
**2bangkok.com**  
watch the city grow

The Angkor Group  
Angkor.com  
2bangkok.com  
GoldenPeninsula.com  
japanomatic.com  
cityrain.com

Bangkok presentation in the internet







Implementing public-transport and private-vehicular projects:

## Some remarkable achievements

Construction technology and industry:

- Prestressed modular structures (MRT, expressways):  
Manufacturing and delivery “just on time”
- Bore pile technology (highrise buildings, expressways)
- BTS: Trains, safety, and operational systems
- Tunnel construction for subway lines

Financing:

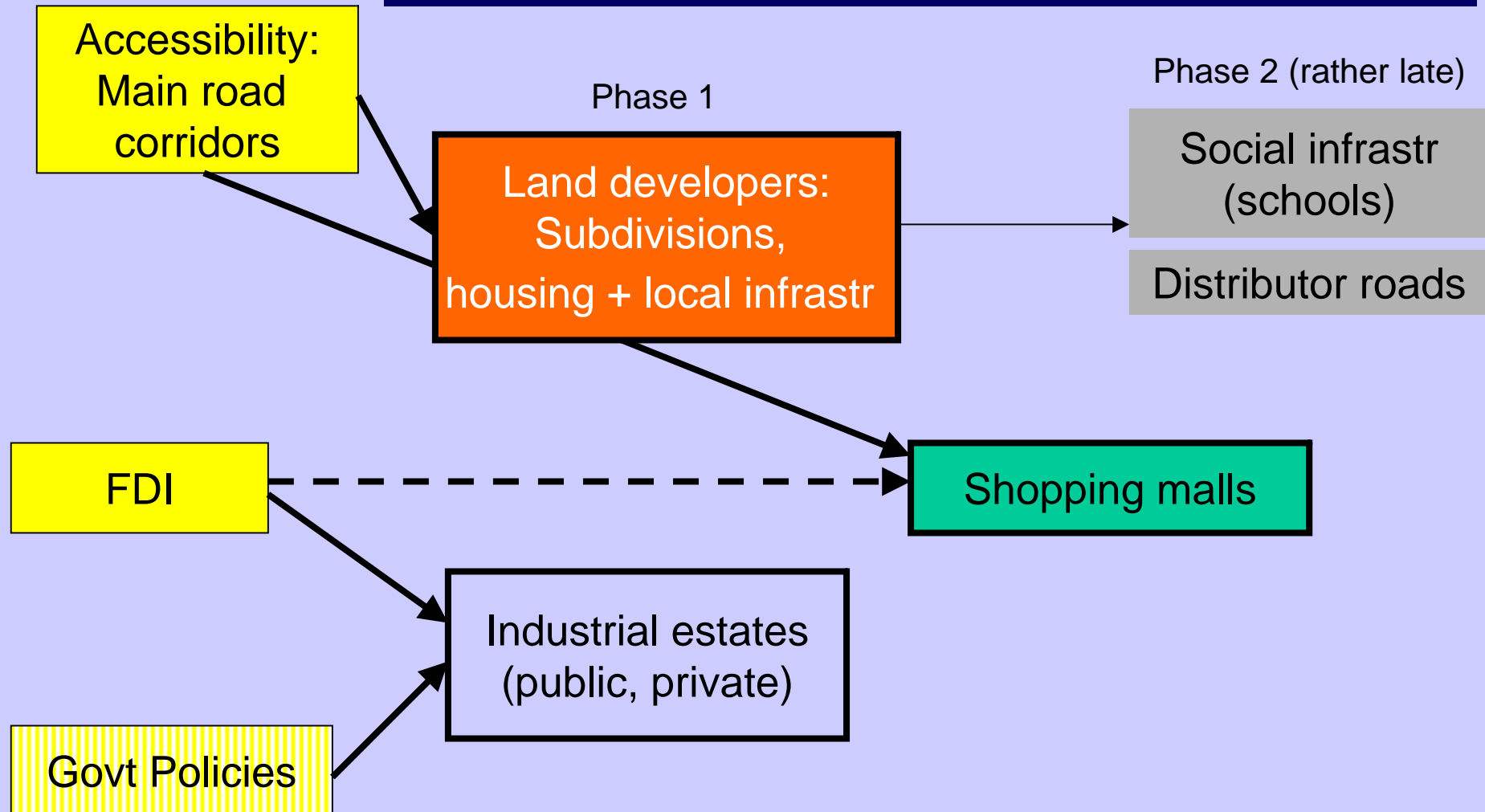
- International private consortia
- Public-private partnerships

## Mega Cities III: Bangkok Development and Transport

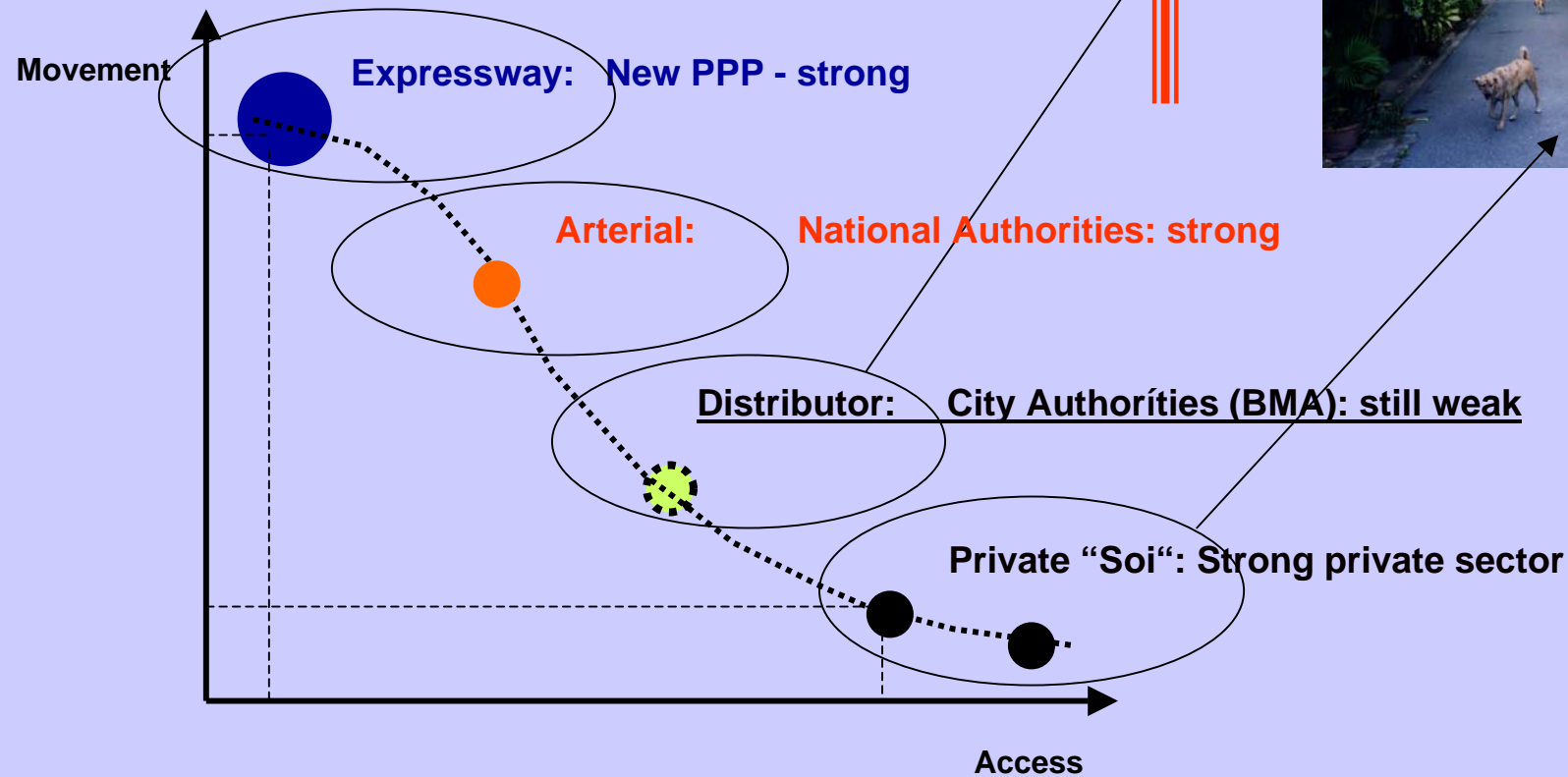
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# Mechanisms of urban development (1): Networks and land

Main “drivers”



## Mechanisms (2): The weakly structured road network – reflecting the inappropriate division of responsibilities





## Institutions (1): Plan co-ordination

- Vertical division of responsibilities: National Authorities too strong compared with BMA (increasingly important) and weak local authorities in adjacent provinces
- Horizontal division: Several ministries (Transport! Interior!); growing influence: Ministries of Science & Technology, Environment
- Coordinating functions (regional, urban transport) still very confusing and weak
- A single authority responsible for metropolitan management (as proposed in 1975)? A pipe dream...

## Institutions (2): Transport policies?

- Political decisions almost exclusively pro-automobile, and only reluctantly pro- public transport
- Slowly growing technical competencies - but perennial managerial weaknesses and corruption
- Policy for goods transport questionable (railways?), but also not very efficient (Bangkok bypasses)

## Institutions (3): Housing policy

### **Policy shift:**

- Legalization and registration of slums

### **Consequences:**

- Considerable social improvements (access to schools!!)
- Slum improvement: Drainage, water, electricity
- Self-help housing improvements

### **Market signals:**

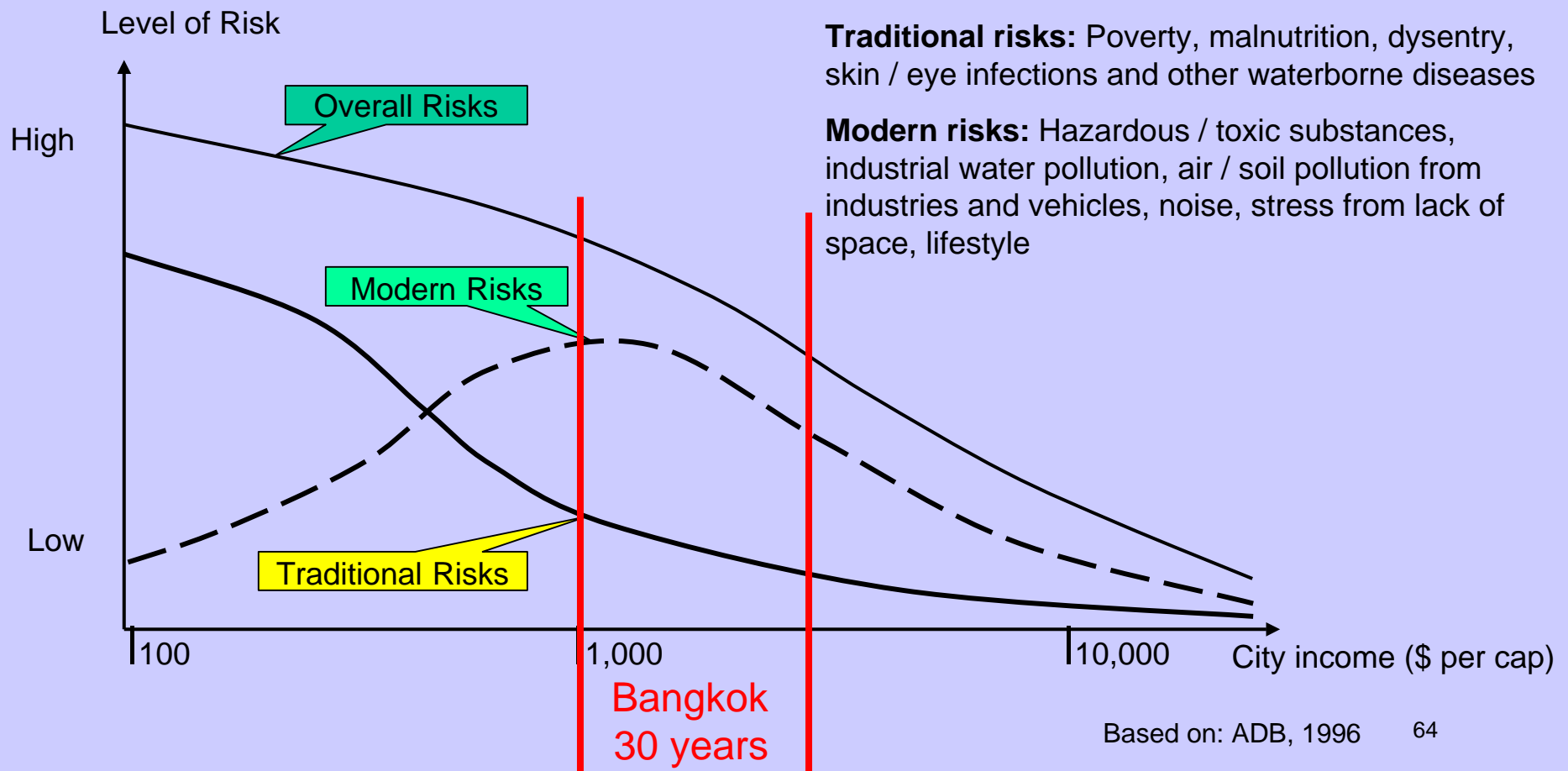
- Private housing involvement grown considerably
- Increase in inexpensive rental apartments and low-cost condominium units

## Institutions (4): Environmental awareness / policies

- Since 1990, rapid increase in public debate of environmental issues (garbage recycling, rivers, air pollution, noise, e.g.)
- Since 1991, quick introduction of lead-free gasoline
- Many new foreign-supported projects in Environmental Management
- High-level lobby against the “noisy and polluting” elevated MRT project
- Pressure on government >>> in 1994, government decision that MRT must be underground (but BTS permitted to stay as “skytrain”)
- Strange: No lobby against Freeways...?!



# Environmental issues (1): Changing environmental risks vs. city income levels



# Environmental issues (2):

## City typology: Bangkok experience seems to prove it

Selected Problems	Lower-income	Lower-middle	Upper-middle	Upper-income
Land managemt	Uncontrolled	Ineffective land use controls	Some environm'l zoning	Environmental zoning commonplace
Water supply & sanitation	Low quality, especially for poor	Low access for poor	Generally acceptable	Good; concern with trace substances
Drainage	Low coverage, frequent flooding	Inadequate; frequent flooding	Reasonable	Good
Solid waste	Low coverage, open dumping	Inadequate, uncontrolled landfill	Semi-controlled landfill	Good covge, contr'd landfill, recycling
Air pollution	Severe problems in some cities	Severe problems (vehic emission)	Severe, many cities (coal/vehicles)	Some cities (vehic), health priority
Hazardous waste	Non-existent capacity	Severe problems, no capacity	Severe problems, growing capacity	From remediation to prevention

## Environmental issues (3):

### The “transition model” of urban environmental problems

Environmental problems closely interconnected, often damaging to the poor and politically disadvantaged

Marked differences of environmental problems between poor and rich cities – most Asian metropolitan regions between being poor and rich

#### Transition from poor to affluent cities:

- **Poor** cities: Mainly local, health-threatening problems (drainage, water supply, sanitation)
- **Middle-income** cities: More city-regional problems
- **Affluent** cities: Relatively healthy living, but large environmental burden, long-term problems, global footprint



# The Crisis of 1997

- Boom since 1984, fuelled by FDI (from Japan, Taiwan, and Korea) >>> Thailand (Central Region) most preferred location
- SE Asian crisis starting from the “Economic Bubble” of Bangkok – overrated land values, greedy owners, banks
- Massive crash: Baht/US\$ from 25 to 50 in 6 months, hard IMF-measures, many companies bankrupt
- Most visible sign: 300 construction sites stopped in Bangkok
- Road traffic declined by some 15%, new cars minus 70%
- But --- relatively low unemployment (approx. 5% only?), flexible reaction (individually and companies), principal re-orientation in the economy, and by now, gradual recovery

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# Concluding Remarks (1)

## Chaos? System?

- Some Bangkok Projects mayan be added to *The Great Planning Disasters* (Sir Peter Hall, 1982)
- The 'Chaos Principle' is on the decline
- Notions of a System are increasingly noticeable
- The Vitality / Resilience is simply amazing
- There is some progress in Urban Management (including environmental management and action)

## Concluding Remarks (2)

### **Governance:**

- Heavy emphasis on decentralized democratic governance (new constitution, 1997) with hopes and problems

### **Sustainable development:**

- Everyone is talking about it, but does it really matter in major decisions (pro-auto vs pro-public transport, e.g.)
- Compact urban form? Prevention of land fragmentation?

### **Prognosis:**

- Nevertheless... Cautiously optimistic, but obstacles and risks must be recognized realistically



# Concluding Remarks (3): Bangkok Transport Development as a “Model”?

Transport problems & policies clearly reflect the shifts in the political economy (as well as technological changes)



Ingenious private makeshift solutions...

... but no solutions to internalizing the costs by road pricing and other measures (except Singapore!)



Thank you  
for your attention

Mega Cities III



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